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Improving leadership impact through machine learning applied to Human Resources Management

Autor: María del Mar Ruiz Andújar
Director: Dr. Natalia Cassinello Plaza

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To my husband Felipe, and my sons Daniel and Pablo.

To my father, who taught me the keys to leadership since I was a child.

To my mother, my siblings and my nieces.

Acknowledgments

I would first like to dedicate this thesis to my father who, although he is not physically with us, I know that he continues to accompany me on my journey, and in a very special way during the development of this thesis and my latest professional advances.

Since I was very young, my father started teaching me how he ran a company, how he managed clients, how he moved the team he managed forward, and he always had knowledge pills that he repeated to me over and over again to be part of my learning. I still retain and apply these learnings today as part of my own management development and try to instil them both in my teams at work, and also in my children in their own academic development at home.

Values that he instilled in my siblings and me such as effort and demand, excellence in results, integrity and humility that would allow us not to lose our reference, and the courage to make decisions have always been present in our lives. There is no worse decision than the one that is not taken and once taken, not to look back or to take impulse was one of his mantras.

I started my career at ICADE knowing that I wanted to reach where my father had reached professionally, leading a company and a profit and loss account through team management. And 30 years later, I have managed to achieve what I once dreamed of after many years of effort, demand and learning. And today I am back at ICADE to write about one of the areas that has had the greatest impact on me in my professional career, which is the development of leadership to get a team to move towards achieving results. In this development, one of my concerns has always been how to advance in the development of this leadership, what have been the keys to achieve results and how to improve in this area.

This is the motivation that has led me to develop this thesis. The concern to analyse in a rigorous and academic way what are the keys to effective leadership, and how an organization can improve the impact of leadership through the advanced use of data, with my own experience as the basis for this development.

Abstract

This research delves into the significance of effective leadership in enhancing organizational performance and competitive advantage. By analysing a business case with real and comprehensive leadership data of more than 1.200 executives from 360-degree feedback and human resources system, this study identifies key leadership styles and behaviours that impact performance outcomes, and how leadership effectiveness is impacted by a different combination of age, seniority and team composition. Utilizing machine learning with hierarchical clustering first, and subsequent regression analysis, this research highlights the importance of transformational and participative leadership styles in driving positive results, the need to challenge negative leadership states such as change aversion and impostor syndrome to ensure leadership effectiveness, and the importance of having an optimal combination of leadership styles, age and seniority. By understanding the variables that influence performance outcomes and implementing actionable initiatives based on HR analytics, organizations can optimize leadership development practices. This research contributes to literature by filling the gap between theoretical suggestions and the actual reality observed in empirical business case (Vogel et al., 2021), defining a link between process models and performance outcomes with a more strategic use of 360-feedback data (Day, David V. et al., 2014) and offering rigorous empirical research in HR Analytics.

Keywords: leadership, transformational leadership, leadership impact, people analytics, hierarchical clustering, feedback 360

Resumen

Esta investigación profundiza en el estudio del impacto de liderazgo en el rendimiento organizativo como palanca del desarrollo de una ventaja competitiva. A través del estudio de un caso de negocio con datos de liderazgo reales y exhaustivos de más de 1.200 directivos procedentes del sistema feedback 360 y de recursos humanos, esta investigación permite identificar qué comportamientos, estilos de liderazgo y perfil de directivos tienen mayor impacto en los resultados medidos a través de la evaluación del desempeño de objetivos cuantitativos. Además de los comportamientos y estilos de liderazgo, permite analizar cómo el resultado depende de la combinación de diferentes segmentos de líderes, edad, antigüedad y composición del equipo. A través del uso de machine learning primero con un clustering jerárquico y con una regresión después, esta investigación evidencia el impacto positivo de los liderazgos transformacional y participativo en el resultado de una organización, la necesidad de gestionar estilos de liderazgo más negativos como el liderazgo narcisista, y la gestión de la aversión al cambio y el síndrome del impostor como palancas para asegurar un liderazgo más efectivo que lleve a mejor impacto en resultados. Así como la importancia de una combinación adecuada de los estilos de liderazgo, edad, antigüedad y composición del equipo para lograr mejor impacto. En este estudio evidencio cómo una organización podría mejorar el impacto del liderazgo en resultados mediante el entendimiento de cuáles son las principales variables que impactan en este resultado y aplicando medidas de gestión en el ámbito de recursos humanos como resultado de la aplicación de HR analytics.

Esta investigación contribuye a la literatura cubriendo el gap que existe entre la teoría y la realidad práctica través del análisis de un caso de negocio real   (Vogel et al., 2021), estableciendo una conexión entre proceso y resultados con un uso más estratégico de los datos de la evaluación 360 (Day, David V. et al., 2014) ofreciendo un caso empírico de HR analytics.

Keywords: liderazgo, liderazgo transformacional, liderazgo efectivo, inteligencia artificial aplicada a recursos humanos, modelo 360 de evaluación

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Chapter 1

Introduction

1.1. Introduction

Leadership is a crucial part of building a sustainable competitive advantage (Ellinger & Ellinger, 2021) and it allows the creation of both human and social capital, which are key elements to compete in the current challenging competitive environment (Mahdi & Almsafir, 2014). Indeed, organizational performance relies on the cooperative efforts of multiple leaders who possess the ability to be flexible, adaptive, and responsive to changing circumstances (Yukl, 2008a).

Given the dynamic nature of the competitive context, the development of effective leaders and leadership behaviour is a central and widespread concern across organizations. Therefore, there is a continuous emphasis on cultivating leadership skills, fostering leadership behaviours, and ensuring that individuals in leadership roles are

prepared to navigate the complexities of their roles. How to develop leaders and leadership effectively to impact organizational outcomes is a priority issue for most organizations (Day et al., 2014). Moreover, achieving the fundamental state of leadership may lead to get higher levels of performance (Quinn, 2005) and getting out of the comfort zone to provide challenging opportunities encouraging innovation (White, 2009a).

The academic literature on leadership styles is extremely broad and with different approaches for more than a century. However, there is a reduced number of empirical studies with representative samples that allow to obtain results contrasted with real cases. In this context, this thesis provides an empirical approach based on AI techniques of a sample of more than 1.200 executives to analyse the relationship between leadership style and organizational impact, a topic that continues the debate in the literature and in companies for the management of human resources.

Improving the effectiveness of leadership in an organization requires an understanding of different research areas since leadership is a complex process in which leaders, followers and context interact through social systems (Day, 2000).

Leadership effectiveness is a crucial aspect of organizational success, as it directly impacts the performance and outcomes of a team or organization. Research has shown that certain leader characteristics are associated with enhanced team performance, however, evaluating leadership effectiveness requires considering feedback from multiple sources and focusing on the actual impact of a leader on the organization's performance (Hogan et al., 1994). Leadership effectiveness refers to the ability of a leader to successfully influence and guide individuals or groups towards achieving organizational goals. Effective leadership involves various organizational conditions, personal behaviours, and interpersonal skills that contribute to the overall success of the organization. It is characterized by the leader's capacity to inspire, motivate, and facilitate collective efforts to realize shared objectives. Effective leaders demonstrate self-sacrificial work that benefits the organization, inspire employees through their

actions, and have a positive impact on followers and the overall social systems (Sonmez Cakir & Adiguzel, 2020).

There are four main literature fields to contextualize this research: i) Leadership theories, ii) competencies and skills, iii) the process of leaders and leadership development and iv) human resources analytics or people analytics.

The first area of research refers to leadership theories, which has an extensive history over a century. In this area, research began with Traditional Leadership theories which focused on the individual level such as Trait theories (Gehring, 2007), the different leadership styles as part of the Behavioural school (MacGregor, 1960) and Situational leadership theories (Hersey et al., 1969) (Fiedler, 1978). After traditional leadership theories, a new generation of leadership theories emerged where Transformational leadership was a seminal shift in leadership. (Bass & Bass Bernard, 1985a). Then, new theories appeared such as Leader-member exchange theory which focused on the leaders and followers' relation (Graen & Uhl-Bien, 1995), leadership as part of a group with the Social identity model approach (van Knippenberg, D. et al., 2004) and development of Authentic leadership (Gardner et al., 2011a). Besides these positive theories regarding leadership, it is also relevant to consider negative leadership theories which have had less attention from researchers (Krasikova, D. V. et al., 2013). Through the study of all these leadership theories, it is possible to define "what" type of leadership is to be developed in an organization and what are the key elements for it. Not only at the individual level of the leaders, but also at the level of the employees, and the relationship between them and as part of an organizational context.

The second area of research after leadership theories refers to the competencies and skills that need to be cultivated in the leadership development of an organization according to the type of leadership to be implemented. Since the new concept of competency was introduced in 1970 (McClelland, 1973), lot of research has been done regarding leadership competence models to help organizations have more effective leaders (Park, S. et al., 2018). Understanding leadership competency models and how they

frame the behaviours an organization wants to cultivate in its leaders is a key element of leadership development (Day, 2000).

The third area of research to be analysed refers to the process of leader and leadership development and practices that exist to implement it. Leadership is more than individual development and is relevant understanding the difference between leader development and leadership development (Day, D. V., 2000). Not only leader development is required, but also to develop an effective leadership which is defined as *"expanding the collective capacity of organizational members to engage effectively in leadership roles and processes"* (McCauley & Van Velsor, 2004). There is a trend in leader and leadership development fields that places greater emphasis on developmental science principles, signalling a shift from a theory-centric approach to a more dynamic and individualized perspective on leadership growth and evolution. To ensure this development, the role of process in leader and leadership development is key, tailoring developmental strategies to individual needs and organizational contexts (Day et al., 2014). A variety of practices have been developed and implemented in organizations for leaders and leadership development as 360-degree feedback, mentoring practice, coaching, job assignments or action learning initiatives (Day, 2000). Impact on leadership interventions differs depending on different circumstances, overall, leadership interventions produce a 66% probability of achieving a positive impact versus a 50–50 random effect (Avolio et al., 2009a).

The fourth and last field to consider a comprehensive view of leadership effectiveness relates to human resources analytics or people analytics, a relatively new area of research that leverages data and machine learning to improve the human resources decision-making process providing actionable insights and, contributing to organizational success (Bonilla-Chaves & Palos-Sánchez, 2023a). Recent empirical research shows how to use machine learning to optimise employee performance valuations (Escolar-Jimenez et al., 2019).

The analysis of leadership effectiveness is overly broad throughout academic research and is conducted from different fields of study, most of which refer to the four areas of research mentioned above. However, there is little empirical evidence related to significant business cases that connects and unites the different concepts related to leadership styles, competencies, 360° feedback and impact of results through people analytics. In this context, the thesis provides practical insight into the analysis of the impact of leadership on performance results in an organization trough empirical business case with more than 1.200 executives data in a multinational company.

1.2. Research question

This research has an overall objective to analyse leadership and its impact on performance through an empirical business case study to contribute to leadership effectiveness through machine learning and Human Resource analytics, formulated in three specific research questions:

- How are the types of leaders in a global company using actual leadership data from 360-degree feedback?
- Which are the variables that impact the most in performance outcomes?
- Which methodology might be implemented in the organization to better understand and measure leadership to define new actionable initiatives?

In this research, through the analysis of a business case, we provide a complete view of the study of leadership effectiveness by incorporating the analysis of real data from leaders of a multinational organization to the theoretical framework of the four areas of research just discussed. Through the use of People Analytics, with 360 feedback data as part of the development process in the organization, we analyse the key behaviours and how this allows to identify different leadership styles and their impact in performance outcomes. We review different leadership types present in company, competence models and behaviours measurement, and their impact on performance outcomes by

annual performance goals achievement valuation. By utilizing empirical data coming from 360-degree feedback and using machine learning models as hierarchical clustering first and subsequent regression analysis, we draw meaningful conclusions and potentially offer actionable recommendations for improving leadership impact within the organization, giving a new methodology to measure and follow leadership effectiveness development. This research offers a broader strategy by aggregating the effects of leadership both behavioural, personal, and professional data in analysing performance impact.

This research may contribute to the literature with an empirical case study driving a more comprehensive approach to leadership effectiveness filling the gap between the theoretical suggestions and the actual reality observed in practical application (Vogel et al., 2021). Indeed, it fulfils a need for research that not only establishes the link between process models and outcomes but also does so with a nuanced understanding of individual differences in developmental trajectories. Additionally, it may answer a call for an enhanced and more strategic use of 360-degree feedback data to enrich the research findings and insights data defined (Day et al., 2014), and the need for rigorous empirical research, utilizing quantitative studies and adoption frameworks, to advance the understanding of HR analytics adoption and its impact on organizational performance and other relevant variables (Bonilla-Chaves & Palos-Sánchez, 2023a).

Although there is a large body of research in the literature that attempts to analyse the impact of leadership on performance results, these studies have certain limitations. They are generally studies conducted with a survey specifically designed to analyse the research target, rather than based on actual leadership data within organizations. Moreover, these studies usually refer to small samples with specific designs, referring the study to certain leadership styles, with limited independent variables and normally using bivariate correlations (Avolio et al., 2009c). Notably, that there is a lack in the literature on about regression analyses conducted specifically with clusters of leaders as a focal unit of analysis through an empirical case study.

This empirical research offers a valuable contribution to the literature due to it is based on the whole and actual leadership data of a multinational company in charge of more than 100.000 employees. The source of the data is reliable as it comes from human resources information systems, it is not a specific survey. It allows the analysis of diverse types of leadership according to the valuation of the managers' behaviours, positive leadership styles and theories, and also negative types of leadership. This study offers a new view of how to analyse 360° feedback data in a way that allows you to isolate different biases and view segments of leaders with the aggregation of all effects. It incorporates a new methodology and application of machine learning to human resources data to measure leader types and impact on results expanding the range of practical applications of HR analytics. And finally, it generates practical implications for the human resources department in defining improvement actions for managers

This research has been done in collaboration with the Human Resources Department and specifically with the People Analytics team. The proposal received endorsement, thereby facilitating the provision of valuable insights concerning leadership dynamics, discernment of leadership archetypes within the organization, and identification of competencies to be enhanced or potentially discouragement.

A literature review has been conducted to understand the broad body of research in the leadership field using Web of Science, Scopus, and Google Scholar. This literature review includes main leadership theories, most relevant competence and behaviours leadership models, leader and leadership development main research and human resource and people analytics review.

1.3. Research structure

This research is organised as follows: Chapter 1 presents an overview of the relationship between leadership and impact in an organization, what different areas of research exist in this regard, what gaps this thesis aims to fill, and the questions to provide answers as

a way of improving Human Resource in improving results through leadership management. Chapter 2 summarises the literature review according to research question. Chapter 3 describes the case study and explains the methodology using machine learning, hierarchical clustering and regression analysis, with data of more than 1.200 executives in a multinational organization present in ten geographies. Chapter 4 incorporates results and interpretation both for clustering analysis and regression. Finally, Chapter 5 summarizes conclusions, practical implication, limitations and future research directions.

Figure 1: *Research infographics*
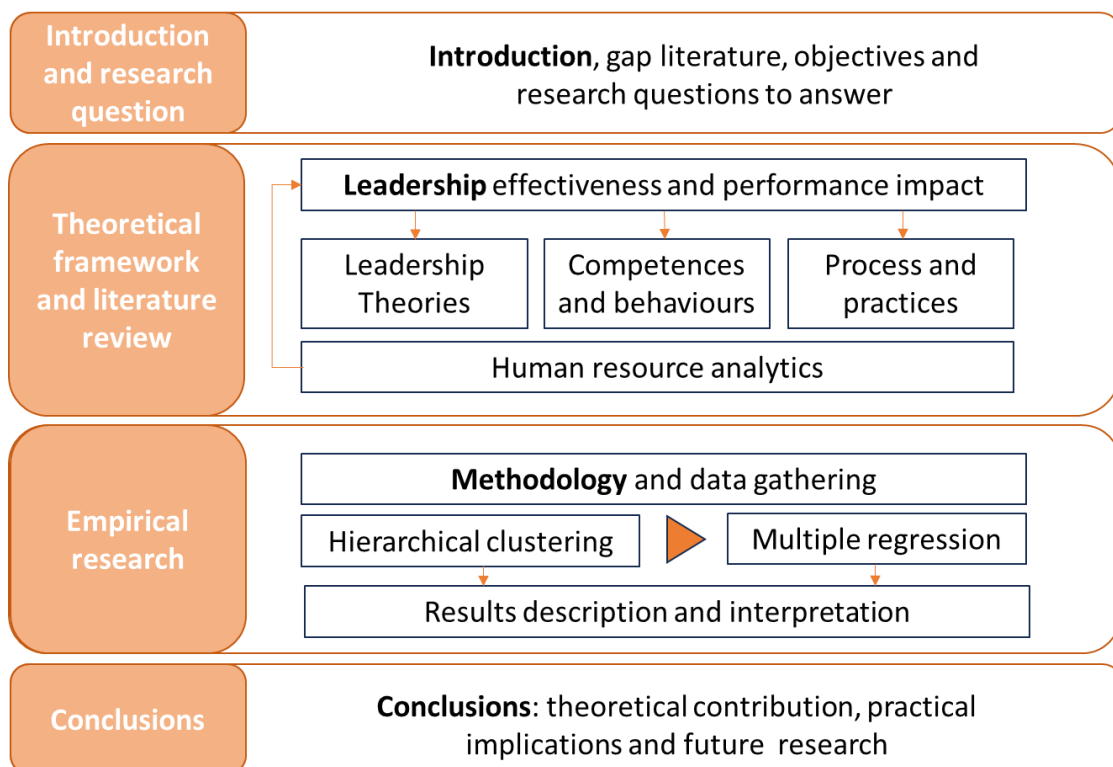
Source: Own elaboration

Chapter 2

Literature review

In this literature review we analyse the four areas of research in the field of effective leadership development that we introduced in the previous chapter which are leadership theories, competencies models, processes and practices in leader and leadership development and human resource analytics. Previous to this review, we first describe how leadership research has evolved over time (Vogel et al., 2021) and what is meant by effective leadership as a source of competitive advantage (Mahdi & Almsafir, 2014).

With the first area which refers to Leadership theories we begin with a review of traditional leadership theories such as The Great Man Theory (Borgatta et al., 1963) to new leadership ones such as Transformational leadership (Bass & Bass Bernard, 1985a), then Authentic Leadership (Avolio & Gardner, 2005), the leader-member exchange theory (Graen & Uhl-Bien, 1995), or the role of leadership as part of a group with social identity

model approach (Van Knippenberg, Daan & Hogg, 2003). In addition to leadership theories, we analyse the competency models (Bird, 2017) necessary in leadership development where certain skills and behaviours are highlighted, adding the analysis of the key elements for leadership development with emphasis on the most effective practices to measure leadership, such as 360º feedback (Day, 2000) . And finish the literature review by analysing the latest advances in HR analytics (Bonilla-Chaves & Palos-Sánchez, 2023b) and how the application of new analytical models can help improve decision making in the field of leadership development in an organization (Figure 2).

The literature review is based on the Handbook of Leadership by Bass, which provides a comprehensive overview of the different aspects to be analysed in this field. Additionally, the search for the most recent literature reviews through key words in Web of Science and Scopus has allowed us to identify seminal papers in the different areas of research in which this thesis is framed, always selecting academic articles in the highest valuation ranges and with the highest levels of references. Subsequently, as each section of the literature review progresses, the sequence of research evolves from one article to another, identifying the citations that most apply to the discussion of the research area.

Figure 2: *Leadership infographics literature review*
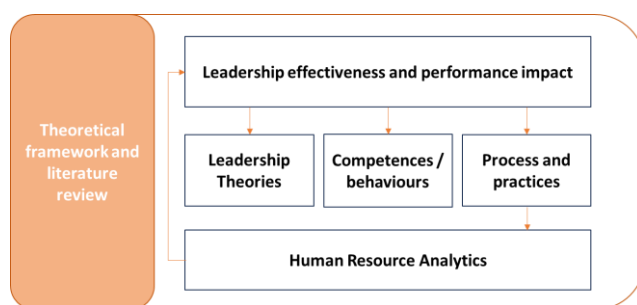
Source: Own elaboration

2.1. Leadership theories research evolution

The first studies on leadership began at the beginning of the 20th with "Great man theory" as a result of studying specific leaders at that time, and this process then resulted in the "trait theory of leadership" which defined different leadership styles.

Recent bibliometric study reviews the evolution of the leadership literature over time using different bibliometric approaches to provide a comprehensive and holistic view to cover the fragmentation that exists in the literature on leadership and leadership development field (Vogel et al., 2021). This author describes three principal areas of knowledge during past decades which include leadership styles, seminal and theoretical frameworks; theoretical frameworks and intra-person learning mechanisms in which leaders' identity is a relevant area of research; and a third field regarding learning and elements of the leadership development process; (Vogel et al., 2021).

In leadership styles the main theories evolve around two main topics. The first one, is the origin of traditional leadership research and is focused on leaders, their skills, and behaviours. A seminal shift in leadership research was the transformational and transactional leadership theory (Bass & Bass Bernard, 1985b), but also the evolution of charismatic leadership (Shamir et al., 1993) and then, the leader-member exchange theory that focuses not only on the leader, but also in the follower and the relationship (Graen & Uhl-Bien, 1995). The second topic of research in leadership styles literature, focuses on the leadership development process, and it includes foundational theoretical framework of authentic leadership development (Avolio & Gardner, 2005).

The second area of research includes theoretical frameworks and intra-person learning mechanisms. Most of research in this area is theoretical focused on organization and system perspectives. Key seminal papers come from Day which offer a review on leadership development connecting different areas of research (Day, 2000), and a metanalysis of leadership intervention impact (Avolio et al., 2009d).

The third area of knowledge refers to learning and elements of leadership development process, most of research describes developmental interventions identifying key elements of the learning and development process. In this area we can find some key studies, such as longitudinal study assessing the impact of experience, context, and individual differences on leadership skill development at work (DeRue & Wellman, 2009) or a metanalysis on the relationship between formal training interventions and multi-level performance, knowledge, and expertise (Collins & Holton III, 2004).

Another approach from Vogel (2021) looking at more recent leadership research reveals three main topics that researchers have been focusing on in the last years. Research regarding authentic leadership (Avolio & Gardner, 2005) and empirical work; more focus on empirical leadership development research and multi-level work; and alternative and critical approaches to leadership development; and social leader identity development (Van Knippenberg, Daan & Hogg, 2003).

Future areas of research in leadership development field are identified (Vogel et al., 2021): evolving research development in the current theoretical framework in a more comprehensive way incorporating analysis of personal and contextual antecedents instead of analysing independent effects focussing on leadership developmental outcomes; developing new angles of leadership research such as negative impact from leadership, for example, destructive leadership theories (Krasikova, D. V. et al., 2013) or toxic triangle of leadership (Padilla et al., 2007); and finally transforming leadership research by creating research-practice partnerships.

After summary of how the academic literature on leadership has evolved, we now review the theoretical framework of the most relevant areas to consider in this study such as effective leadership as a source of competitive advantage, the most relevant leadership theories, competency models, the most common practices in leadership development with special focus on the 360-degree feedback , and finally, the recent evolution of HR Analytics as a tool to analyse leadership analysis and improvement in the decision making process.

2.2. Leadership effectiveness and performance

Organizational effectiveness relies on creating a sustainable competitive advantage. A core element of this competitive advantage is the creation of both human and social capital, which depend on the development of strategic leadership capabilities, so relevant in a current competitive environment (Mahdi & Almsafir, 2014). Strategic leadership allows access to critical resources for the organization's competitiveness, such as the creation of alliances with different stakeholders and the development of human capital (Hitt & Duane, 2002). It is key role of strategic leadership to invest in creating theses core resources and competencies to enhance a sustainable competitive advantage (Ireland & Hitt, 2005). Leadership also has a significant impact on the definition of the vision, mission, and strategy as well as the implementation of the necessary activities to carry it out and achieve the objectives (Xu & Wang, 2008) and the creation of a culture that in turn determines the effectiveness of the organization (Klein et al., 2013). Organizations need effective leaders to coordinate and motivate employees to achieve goals (Vigoda-Gadot, 2007a). Thus, the performance of an organization is associated with the leadership style that can have positive or negative effects on the evolution of the organization depending on the type of leadership. Research regarding six different leadership styles' impact on performance revealed that transformational, autocratic, and democratic styles had a positive influence on performance. On the contrary, transactional, charismatic, and bureaucratic leadership were found to have a negative impact (Al Khajeh, 2018). An empirical study on a financial organization also showed that transformational and democratic leadership styles should be implemented as they were the most positive related to performance (Ojokuku et al., 2012a).

Psychological capital has increased its attention as an important construct in leadership research, and it includes four factors which are self-efficacy, hope, optimism, and resiliency. It is considered to be a vital factor for authentic leadership development and influence. Research shows the correlations of Psychological capital with authenticity, leadership, and leadership outcomes, and how transformational leadership plays a

mediating role for Psychological capital to predict leadership outcomes, effectiveness, extra effort, and satisfaction (Toor & Ofori, 2010)

Not only leadership style is relevant, but other research has also shown how organizational politics is a relevant antecedent of employees' performance (Adams et al., 2002). Organizational politics is defined as the behaviour strategically defined to maximize self-interest versus organizational interest (Ferris et al., 2013), it is a power battle and tactics definition to influence for the own benefit (Pfeffer, 1993). A prominent level of internal politics negatively impacts in effectiveness since it may be understood as unfair behaviour by a leader. Research shows that the perception of organizational politics is positive with transactional leadership but not with transformational leadership. The leader has the responsibility to create a healthy and fair work culture and environment that enables the expectations of the members of an organization as a whole to be met. A balanced relationship between managers and subordinates with fair treatment should be the basis of the strategy. To the extent that there is an environment of transparent and fair relations, the level of internal politics is reduced, and the performance of the organization is increased (Vigoda-Gadot, 2007b).

Regarding leadership impact and effectiveness, there is a notable concept defined by Quinn (2005) which refers to "The fundamental state of leadership". This concept involves relying on one's fundamental values and instincts to behave at a higher level of leadership effectiveness. It is the state in which leaders demonstrate characteristics such as prioritizing results, being self-directed, focusing on others, and being open to external influences and it results in higher performance by fostering increased awareness, positive influence, clarity of vision, self-empowerment, empathy, creative thinking, inspiration, and a focus on continuous improvement. These leaders inspire others and promote a culture of excellence defining high performance expectations with a positive behaviour (Quinn, 2005). In the everyday context, leaders can remain in their normal state of being or can face new challenges that requires an elevated mindset.

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Figure 3: *"There is normal, and there is fundamental" Harvard Business Review (2005)*

In the normal state, I am …	In the fundamental state, I am….
COMFORT CENTERED	**RESULTS CENTERED**
I stick with what I know	I venture beyond familiar territory to pursue ambitious new outcomes
EXTERNALLY DIRECTED	**INTERNALLY DIRECTED**
I comply with others' wishes in an effort to keep the peace	I behave according to my values
SELF-FOCUSED	**OTHER FOCUSED**
I place my interests above those of the group	I put the collective good first
INTERNALLY CLOSED	**EXTERNALLY OPEN**
I block out external stimuli in order to stay on task and avoid risk	I learn from my environment and recognize when there is a need for change

Source: Copyright © Harvard Business Review 2005

The normal state may arise the concept of the comfort zone which is defined as *"a behavioural state in which a person operates in an anxiety-neutral condition, using a limited set of behaviours to deliver a steady level of performance without a sense of risk. It is a state where individuals feel comfortable and familiar, leading to consistent performance levels. Changes in anxiety levels or skills applied can result in changes in performance levels, either positively or negatively"* (Bardwick, 1995)*.*

The comfort zone may have negatives consequences such us lower performance, career brakes, limiting learning, loosing innovation opportunities or avoiding change. Getting

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out from the comfort zone is needed to achieve personal and professional growth to achieve higher levels of performance. To move leaders out of their comfort zones, it is essential to encourage self-awareness, provide challenging opportunities, offer support and resources, foster a culture of experimentation, set stretch goals, encourage continuous learning, and lead by example. By implementing these strategies, leaders can be empowered to embrace change, take risks, and continuously develop their skills, driving innovation and growth within their organizations to better performance (White, 2009b).

Figure 4: *Transition between comfort zone showing the expected performance curve* (White, 2009b).
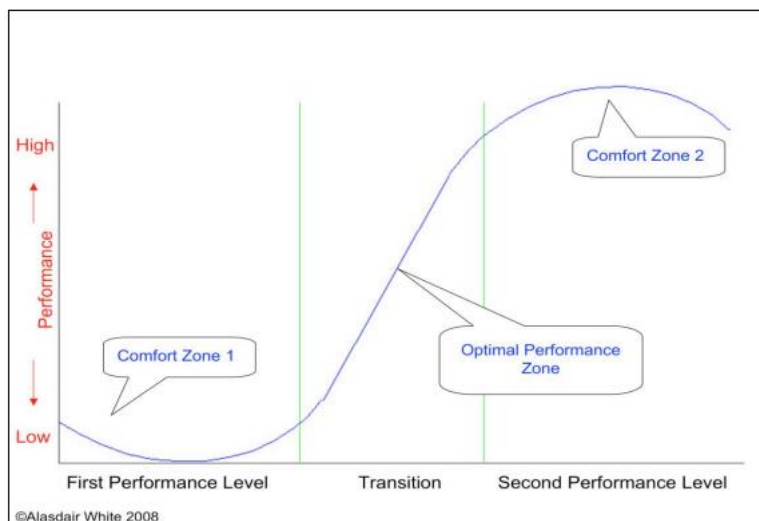
Source: Google Scholar (White, 2009b)*.*

To ensure maintaining prominent levels of performance through leadership, it is key to manage resistance to change, which involves understanding the five-phase coping cycle individuals go through when faced with significant changes. This cycle includes denial, defence, experimentation, decision, and internalization. Carnall highlights the impact of

change on individuals' self-esteem and performance, stressing the need to rebuild self-esteem to enhance performance post-change (Carnall, 2007). By adapting management style to the coping cycle, leaders can effectively guide individuals through the process of change, support their transition to new ways of working, and enhance performance and organizational resilience (White, 2009b).

Figure 5: *The expected performance curve associated with the coping cycle (adapted from Carnall, 1995)* (White, 2009b)*.*

Coping Cycle and Performance Curve adopted from Carnall

©Alasdair White 2008
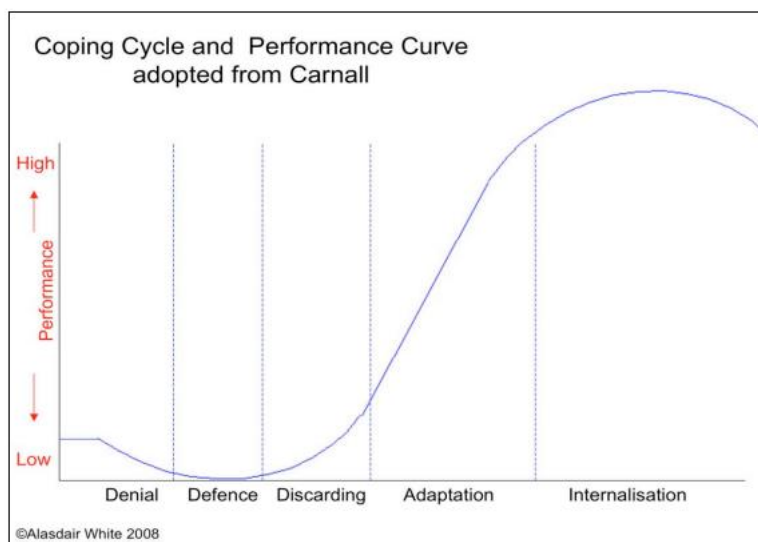
Source: Google Scholar (White, 2009b)*.*

In sum, leadership is a key pillar for creating a sustainable competitive advantage by driving innovation, growth and organizational success to achieve excellent levels of performance. Strategic leadership has a critical role in driving this success empowering employees to embrace change, and take risks through a positive work environment and a culture of excellence.

Below we review the different leadership theories to understand which are the main characteristics of different leadership styles, and the different elements that impact

leadership effectiveness, which not only depends on the leaders, but also on the relation and followers, the context, and the social identity.

2.3. Leadership theories

In this section of the literature review we review the most relevant leadership theories since the beginning of the twentieth century. We start with a brief description of the traditional leadership theories; to go on to describe in more depth the new generation of leadership theories where transformational leadership is the most relevant one. And additionally, we introduce some of the destructive leadership theories about which there is not so much literature, but which are a reality in organizations, and social identity theory as part of the leadership development process within organizations. Summary of the main theories described below.

Figure 6: *summary leadership theories*

Traditional leadership theories	New leadership theories	Destructive leadership theories	Social identity approach
• **Great man** theories (Borgatta et al., 1963) • **Trait theories** (Gehring, 2007) • **Behavioural school**(Mc Gregor, 1969) • **Situational school**(Blake & Mouton, 1985), (Hersey & Blanchard, 1969)	• **Charismatic** leadership (House, 1977), (Conger & Kanungo, 1998) • **Transformational** and transactional leadership (Bass, 1985) • **Leader member Exchange** (Graen , 1995) • **Authentic leadership** (Luthans & Avolio, 2003) (Avolio & Gardner, 2005) • **Servant leadership** (Greenleaf, 2008) • **Distributed, shared, participative leadership,** (Pearce & Conger, 2002), (Wang et al., 2022)	• **Destructive leadership** (Krasikova, Dina V.et aal., 2013) • **Narcissist leadership** (Rosenthal et al., 2006) • **Toxic leadership** (Einarsen, 2007) • **Despotic leadership** (De Hoog & Den Hartog, 2008) • **Dark triad** (Furnham et al., 2013)	• **Social identity model Organizational leadership** (Van Knippenberg, Daan & Hogg, 2003) (Steffens et al., 2021) • **Leadership as group process** (Platow, 2015)

Source: Own elaboration

Summary leadership theories main principles

Traditional leadership theories		
	Great Man theories	Leaders are extraordinary individuals born with inherent qualities that destined them to lead
	Trait theories	Leaders are a combination of traits and qualities to describe positive or virtuous human attributes
	Behavioural school	Focuses on what leaders do rather than who leaders are and as a result Leadership Styles emerge
	Situational school	Leadership depend on the contextual situations leaders face that require adapt leader's approach

New -gen leadership theories		
	Charismatic leadership	Based on Charisma definition, this type of leadership is recognized by their significant impact in followers
	Transformational leadership	Leaders who encompass: Charisma or idealized influence, inspirational motivation, intellectual stimulation and individualized consideration
	Transactional leadership	Characterized by continent reward and management by exception active or passive
	Leader member exchange	This theory focuses both on leaders, their followers and the relationship between them
	Authentic leadership	Leadership with four main components: awareness, unbiased processing, ethics and relational orientation
	Servant/ humble leadership	Leadership that prioritizes serving others and are aware of personal limitations
	Distributed/ shared leadership	Leadership as a result of team-work and collaboration where they collectively lead one another

Destructive leadership theories	Combination of different types of leadership that generate harm to followers or to the organization to ensure personal interests. Abusive supervision, tyranny or bullying are part of this type of leadership.
Social identity approach	Leadership as a group process and leader as part of group member with specific social identity

Source: own elaboration

2.3.1. Traditional leadership theories

The first studies on leadership began at the beginning of the 20th with "Great man theory" (Borgatta et al., 1963) that developed into a formal leadership theory in the early 1900s. Social scientists, during this time, began to closely examine the traits of these so-called "great men." This scrutiny gave rise to what is known as the "trait theory of leadership." The traits theory builds upon the Great Man theory by analysing deeper into the personal characteristics and qualities of leaders (Gehring, 2007).

Bass Handbook of leadership describes four different contrasting leadership styles present in leadership research evolution during the twentieth century: autocratic versus democratic, directive versus participative, task versus relation orientation and initiation versus consideration (Bass & Bass, 2009). Leadership styles are part of Behaviour school that emerged after publication of McGregor's classic book The Human Side of Enterprise in 1960 shifting from traits theories to behavioural theories (MacGregor, 1960).

Autocratic leaders are abusive, controlling, power -oriented, coercive, punitive, and close-minded that take full responsibility for decisions that must be executed by subordinates. On the contrary, democratic leaders express concern for their subordinates in several ways. They seek input, share information, involve subordinates in decision-making processes, and value the autonomy of those they lead. However, depending on the situation distinctive styles are needed. In crisis periods or when organizations need quick turnaround, autocratic and directive leadership might be needed.

Task oriented leaders are goals oriented, and their behaviour reflect their interest in getting things done. On the contrary relational leader put more effort on relations demonstrating concern for others, making efforts to minimize emotional conflicts, fostering harmony among individuals, and managing the level of participation within the group. However, leaders should be both task and relation oriented depending on different situations regarding concerns on results and people, as it measured by Blake & Mouton (1985) and represented in their Managerial grid (Blake & Mouton, 1985). This

model evaluates leadership styles based on two key behavioural dimensions which are the concern for people and concern for production. The level of these dimensions results in five different leadership styles:

1. Impoverished Management (1,1): This style reflects low concern for both people and production. Leaders with this style typically exert minimal effort in both areas and may be indifferent or uninvolved.

2. Country Club Management (1,9): This style reflects high concern for people but low concern for production. Leaders prioritize creating a friendly and comfortable work environment, but they may struggle to achieve prominent levels of productivity.

3. Produce or Perish (9,1): This style reflects high concern for production but low concern for people. Leaders with this style focus primarily on achieving results and meeting objectives, often at the expense of employee satisfaction or morale.

4. Middle-of-the-Road Management (5,5): This style reflects a moderate level of concern for both people and production. Leaders attempt to balance the needs of their employees with the need to achieve organizational goals, but may not excel in either area.

5. Team Management (9,9): This style reflects high concern for both people and production. Leaders with this style strive to create a supportive work environment while also emphasizing the importance of achieving high levels of productivity. This style is considered ideal according to the Managerial Grid model.

The Managerial Grid is often used as a tool for leadership development and training helping leaders to define their leadership styles and identify areas for improvement.

Figure 7: *Managerial grid* (Blake & Mouton, 1985)
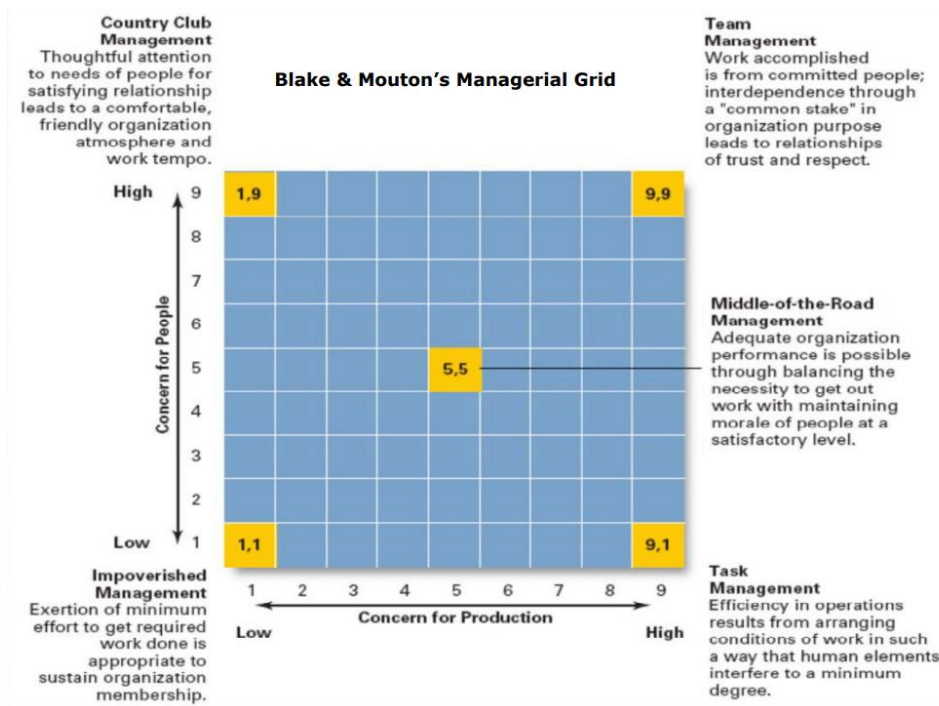
Directive leadership involves leaders taking an active role in problem-solving and decision-making processes expecting subordinates to follow their guidance, while participative leaders involve followers in the decision process making subordinates feel free to participate and express their opinions. Overall, the existing evidence indicates that participative leadership tends to foster greater acceptance of decisions and agreement compared to directive leadership, and seems to be more appropriate for service organizations (Dolatabadi & Safa, 2010) But direction may also have positive impact on followers generating greater satisfaction depending on the circumstances (Muczyk & Reimann, 1987).

Contingency or situational school emerged highlighting that leadership style depends on the situation and circumstances influenced by many factors such as people, task, and organization context. Hersey and Blanchard (1969) defined a model through which leaders adapt their style depending on follower maturity (Hersey & Blanchard, 1969). According to Hersey and Blanchard leaders should have the ability to properly diagnose

the situation and determine the needs of the group: adopt different styles according to the degree of maturity of individual employees, and communication skills to properly inform people on goals and objectives of the team, knowledge on a broad, management methods and techniques giving best results in a particular situation, and the ability to build relationships (formal and informal) between people in the organization using knowledge and competence in practice.

The model suggests that effective leadership depends on matching the leadership style to the readiness or maturity level of the followers. This model emphasizes the importance of tailoring leadership behaviours to the specific needs and readiness level of followers. By understanding and adapting to follower readiness, leaders can effectively guide and support their teams to achieve success. As a result, the key elements are the following:

- Leadership styles: Telling (s1) where the leader provides specific instructions and closely supervises task accomplishment. Selling (S2) where leader provides both direction and support, explaining decisions and encouraging follower participation. Participating (S3) where the leader facilitates decision-making and encourages followers' input and participation and Delegating (S4) where the leader provides minimal guidance, allowing followers to make decisions and take responsibility for task completion
- Follower readiness: the model identifies four levels based on their competence and commitment to completing a task. R1 - Unable and Unwilling are followers that lack the necessary skills and motivation. R2 - Unable but Willing are the followers are motivated but lack the required skills. R3 - Able but Unwilling, the followers that have the skills but lack motivation or confidence, and R4 - Able and Willing, those who are both competent and committed to the task

Figure 8: *Hersey – Blanchard situational leadership Model* (Hersey & Blanchard, 1969).
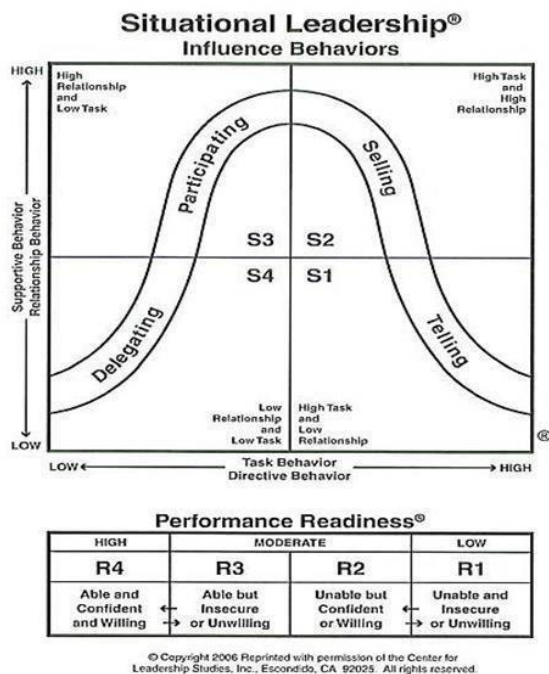
According to Fiedler contingency model (Fiedler, 1978) task orientation approach may be more effective in critical situations or when the leader has remarkably high or very low control, while relation-oriented approach works better when the leaders have more control and environment is more favourable. Fiedler looked at three factors that might impact the condition of management: leader member relations, that refer to how well the manager and the employees get along; task structure, which is the job highly structured, fairly unstructured; and the position power, which is how much authority the manager possess.

Another distinction in leadership styles refers to initiation of structure leadership, is that in which leader initiates the activity planning deadlines and defining how deliverables should be done where patterns of work are well stablished. And considerate leader, the type of leader who express appreciation for the team, making them feel special and make subordinates participate in relevant matters. Long research was made regarding

these two factors through different forms of Leader Behaviour Description Questionnaire in the middle of twenty century (Hemphill & Coons, 1957). Although both are independent, research showed that these factors were correlated with each other depending on personal and situational context. Initiation of structure is more relevant when the group is not already highly organized, and negative perceptions might become into positive appreciation if coercive elements are removed. Consideration improves satisfaction of subordinates and initiation of structure, when structure is low, improves performance (Bass & Bass, 2009).

In the latter part of the 20th century, new leadership theories emerged, as Shamir (1993) describes: "*According to this new genre of leadership theory, such leaders transform the needs, values, preferences, and aspirations of followers from self-interests to collective interests. Further, they cause followers to become highly committed to the leader's mission, to make significant personal sacrifices in the interest of the mission, and to perform above and beyond the call of duty"* (Shamir et al., 1993)*.*

2.3.2. Charismatic leadership

Charismatic leadership emerged with Weber definition of charisma in 1968 which was an adaptation of the theological concept which implies divine grace. According to this concept charismatic leaderships occurs when people follow someone because he or she is "*considered extraordinary and treated as endowed with supernatural, superhuman, or at least specifically exceptional powers or qualities"* (p. 241).

House (1977) proposed a theory of charismatic leadership in organizations. Charismatic leaders are recognized for their significant and extraordinary impact on followers. Followers perceive the leader's beliefs as accurate, unquestionably accept the leader, willingly comply with the leader, feel affection toward the leader, become emotionally invested in the mission of the group or organization, and demonstrate high levels of performance (House & Howell, 1992a).

Further research on charismatic leadership developed a theory distinguishing between socialized and personalized charismatics, elucidating the connection between leader motives and traits, leader behaviour, and its impact on followers (House & Howell, 1992b). House and Shamir (1993) further detailed the process through which charismatic leaders stimulate follower motives aligned with the mission (House & Shamir, 1993).

Charismatic leaders define a compelling vision for the future of the organization, communicating high-performance expectations and empowering followers to achieve the vision, showing an exemplary behaviour, courage, and conviction making self-sacrifices if needed (Shamir et al., 1993)

Conger and Kanungo (1998) described the development of charismatic leadership in three phases. In the first phase, the charismatic leader makes a thorough assessment of the team and the situation. As a next step, a vision and a dream that uniquely identifies him or her to the team are shaped. Finally, the leader drives the realization of this vision through his own personal example, by taking risks and applying unconventional knowledge. In this process, the leader has a remarkable impact on the team with total dedication, commitment, and performance that make him/her worthy of the category of charismatic leader (Conger & Kanungo, 1998a).

Vast amount of research has been done regarding charismatic leadership traits and behaviours. Bass in his handbook summarizes these specific behaviours found in research in lot of empirical studies (Bass & Bass, 2009):

- Expressive behaviour: Charismatic leaders have a high degree of verbal and non-verbal expressiveness to inspire and mobilize others by projecting a strong, dynamic, and assertive presence.
- Self-confidence: determination to lead and realize a purpose and vision is one of the attributes of charisma that markedly differentiates charismatic leaders from the rest, although this determination can imply stubbornness and a lack of openness to accept new ideas.

- Insight: the charismatic leader is also characterized by finding solutions to the team's problems and generating in them a feeling of need for the leader.

- Freedom from internal conflict: The charismatic leader has a strong self-confidence that makes him face conflict situations with determination that does not diminish his vision.

- Eloquence and rhetoric: Charismatic leadership is also characterized by demonstrating rhetorical, eloquent, and effective verbal and nonverbal communication that has a strong impact on followers.

- Activity and energy level: Proactivity, high levels of energy and optimism are traits very much present in charismatic leaders capable of inspiring others.

- Self-sacrificed disposition: Charismatic leaders also show a predisposition to sacrifice, if necessary, which may consist of giving up power or certain personal resources for the benefit of the organization.

In charismatic leadership, the leader defines a shared vision with the team that is usually associated with radical change, and to achieve it, the leader shows a willingness to take risks and make personal sacrifices if necessary. This vision is what they use to achieve team alignment and mobilize action to achieve it (Conger & Kanungo, 1998a).

2.3.3. Transformational and transactional leadership

The first references to transformational leadership are by Burns (1978) who defined transforming leader as one makes the team aware of the importance of the purpose and vision to be achieved and how it can be achieved leaving aside one's own personal interests and raising the needs of subordinates to a level of self-improvement and achievement.

Bass (1985), based on Burns' (1978) description of transformational leadership, developed the transformational leadership model based on strong empirical evidence that represented a major change in the development of research in this field (Bass & Bass

Bernard, 1985a). The development of Bass' theory has had different revisions, but in most recent version, there are 4 dimensions for transformational leadership, 3 dimensions for transactional leadership and a dimension of non-leadership called laissez-faire

For Bass (1985) transformational leadership encompasses four dimensions (Bass & Bass Bernard, 1985b):

- Charisma or idealized influence the way leaders behave in a way that makes followers admire and identify with them, demonstrating conviction and determination and generating an emotional bond with the team
- Inspirational motivation: transformational leaders develop a vision and generate a dream that inspires the team by challenging the team with a high level of demand but with a positive spirit to achieve the objectives, giving meaning to the collective effort.
- Intellectual stimulation: stimulation of the team's creativity to think differently by challenging established beliefs to define new ways of achieving objectives
- Individualized consideration: transformational leaders care the team and attend followers' needs acting as a mentor or coach through active listening.

Transformational and transactional leadership are not opposites, they are separate but complementary concepts, and there are specific developed behaviours that are present in both types of leadership. Transactional leadership encompass three dimensions which include Continent reward and management by exception active or passive. Continent reward refers to the degree to which the leader establishes a sharing relationship with the team by making expectations clear and setting appropriate rewards. Management by exception relates to the degree to which the leader establishes corrective actions as a result of the relationship with the team, actively anticipating possible problems, or passively, when problems have arisen. Finally, laissez faire refers to lack of leadership when leaders don´t face decision, avoiding action and are not present when required.

A meta-analytic review of transformational leadership and performance showed that transformational leadership is positively correlated with individual-level follower

performance, especially in terms of contextual performance as opposed to task performance in most study settings. Additionally, this research tested transformational leadership shows a positive association not only with results at the team level but also at organizational levels. It also showed enhancing effect of transformational leadership over transactional leadership (contingent reward), particularly in predicting individual-level contextual performance and team-level performance (Wang, G. et al., 2011a). Transformational leaders enhance organizational performance by promoting increased team cohesion, motivation, and goal congruence within the top management team (Colbert et al., 2008). They also act as role models for the organization to encourage certain behaviours across all levels of management (Waldman & Yammarino, 1999), and impact in organization performance through the climate and work environment they create which favours transformation (Jung et al., 2003). As it is described by Bass (1985), transformational leaders motivate their teams to "perform beyond expectations" and it has been tested how transformational leadership tends to be a robust predictor of desirable performance outcomes across situations. For this reason, organizations should focus on implementing intervention programs that enhance the leadership style of their leaders to impact in organization performance (Bass & Bass Bernard, 1985b)

We can see below more detailed description of behaviours that are associated with Transformational Leadership main characteristics such as idealized behaviour, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Avolio, 1994).

Table 1: *Transformational Leadership Styles and Behaviours* (Bass & Avolio, 1994)

Transformational Style	Leader Behaviour
Idealized Behaviours: living one's ideals	- Talk about their most important values and beliefs - Specify the importance of having a strong sense of purpose - Consider the moral and ethical consequences of decisions - Champion exciting new possibilities - Talk about the importance of trusting each other

Inspirational Motivation: inspiring others	- Talk optimistically about the future - Talk enthusiastically about what needs to be accomplished - Articulate a compelling vision of the future - Express confidence that goals will be achieved - Provide an exciting image of what is essential to consider - Take a stand on controversial issues
Intellectual Stimulation: stimulating others	- Re-examine critical assumptions to question whether they are appropriate - Seek differing perspectives when solving problems - Get others to look at problems from many different angles - Suggest new ways of looking at how to complete assignments - Encourage non-traditional thinking to deal with traditional problems - Encourage rethinking those ideas which have never been questioned before
Individualized Consideration: coaching and development	- Spend time teaching and coaching - Treat others as individuals rather than just as members of the group - Consider individuals as having different needs, abilities, and aspirations from others - Help others to develop their strengths - Listen attentively to others' concerns - Promote self-development
Idealized Attributes: Respect, trust, and faith	- Instil pride in others for being associated with them - Go beyond their self-interests for the good of the group - Act in ways that build others' respect - Display a sense of power and competence - Make personal sacrifices for others' benefit - Reassure others that obstacles will be overcome

Source: Google Scholar - (Bass & Avolio, 1994)

2.3.4. Leader-member exchange theory (LMX)

LMX emerged during 1970s by Graen, this theory focuses on the relationship between a leader and a member, instead of focusing only on leader characteristics or contextual situations. According to this theory, this relationship has a lot of impact both in individual and organizational outcomes (Gerstner & Day, 1997).

Graen (1995) defined leadership as three main domains interconnected that include the leader, the follower, and the relationship. Leader-member exchange theory is based on the relationship developed between leader and follower and when this relationship is

mature, it brings very positive outcomes for organizations. Development of this theory is based on four stages. First is the discovery of different dyads or type of relations when managers adapt and defined differentiated relationship with direct reports. Second stage of the leadership theory focuses on the relationship and its outcomes. We can find lot of research describing this relationship which is influenced by characteristics and behaviours of leaders and followers, and also evidencing the positive impact in performance, job satisfaction or loyalty. Third, the focus is on how managers differentiate among their employees establishing different ways of collaboration fostering a partnership with each of them. This puts the attention on a partnership relation versus superior subordinate relationship what may increase a more equitable and more high-quality relationship development. And fourth stage is the expansion of dyadic partnership to group and network levels. Leader-member exchange contains three main factors in which the relationship relies on mutual respect for capabilities of each other, deep reciprocal trust, and expectation of potential positive outcomes as a result of the partnership (Graen & Uhl-Bien, 1995).

2.3.5. Authentic leadership development

Concept of authenticity was defined by Harter (2002) as a combination of own needs, desires, beliefs, and personal experiences that has psychological benefits (Harter, 2002).

Authenticity is characterized by the unimpeded expression of one's genuine or core self in everyday endeavours that involves four different components such as awareness, unbiased processing, behaviour, and relational orientation. Awareness involves having, and being motivated to enhance, one's understanding and trust in one's motives, feelings, desires, and self-relevant thoughts. Unbiased processing refers to the relative lack of interpretive distortions in the way one processes information that is relevant to oneself. The third element refers to behave according to personal values, preferences, and needs, rather than acting in a way that is insincere or solely driven by a desire to please others, gain rewards, or avoid punishments. Relational authenticity encompasses

valuing the significance of allowing close individuals to perceive the authentic self and engaging with them in a manner that encourages them to do the same (Kernis & Goldman, 2005). These authenticity components tend to be linked to positives outcomes both intrapersonal and interpersonal. However, sometimes they may have negative effects that can be managed and are likely to diminish as the authenticity is enhanced.

Table 2: *Components of Authenticity* (Kernis & Goldman, 2005)*.*

Authenticity components	Description
Awareness	- Awareness and knowledge of, and trust in, one's motives, feelings, desires, and self-relevant cognitions. - Includes awareness of one's strengths and weaknesses, dominant–recessive aspects of personality, powerful emotions, and their roles in behaviour.
Unbiassed processing	- Minimal, if any, denial, distortion, exaggeration, or ignoring of private knowledge, internal experiences, and externally based self-evaluative information. - Objectivity and acceptance with respect to one's strengths and weaknesses
Behaviour	- Actions congruent with one's values, preferences, and needs. - Not acting merely to please others or to attain rewards or avoid punishments.
Relational orientation	- Values and makes efforts to achieve openness and truthfulness in close relationships. - Important for close others to see "the real you," those deep, dark, or potentially shadowy self-aspects that are not routinely discussed. - Relational authenticity means being genuine and not "fake" in one's relationships with others

Source: Google Scholar (Kernis & Goldman, 2005)*.*

Many definitions of authentic leadership have been done over years. The first definition of authentic leadership was made by Henderson and Hoy (1983, pp. 67–68) where leadership authenticity is the combination of acknowledgment and willingness to take ownership of one's actions, outcomes, and mistakes; non-manipulation of the team and

prioritization of personal identity over expectations associated with a given context (Henderson & Hoy, 1982).

The most relevant contribution in literature to authentic leadership is made by Luthans and Avolio (2003, p.243). Their definition of authentic leadership *"process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviours on the part of leaders and associates, fostering positive self-development. The authentic leader is confident, hopeful, optimistic, resilient, transparent, moral/ethical future-oriented, and gives priority to developing associates into leaders themselves. The authentic leader does not try to coerce or even rationally persuade associates, but rather the leader's authentic values, beliefs, and behaviours serve to model the development of associates."* (Luthans & Avolio, 2003a).

Afterwards, a more refined definition of authentic leadership was done to clearly define components of authentic leadership compared to other leadership theories. This definition describes the most relevant components of authentic leadership (Avolio & Gardner, 2005):

- Positive psychological capital: confidence, optimism, hope, and resiliency are personal resources of authentic leaders.
- Positive moral perspective: authentic leaders rely on their moral capacity, efficacy, courage, and resilience to address ethical challenges and strive for actions that align with their authentic values emphasizing a commitment to moral principles.
- Leader self-awareness: evolving journey in which an individual continually gains insights into their unique qualities, such as talents, strengths, sense of purpose, core values, beliefs, and desires. This process involves continuous self-discovery and reflection, leading to a deeper understanding of various aspects that contribute to one's individuality and authenticity.

- Leader self-regulation: it reflects the ability of authentic leaders to regulate and manage their own behaviour in a way that is consistent with their core values.

- Follower self-awareness/ regulation: the process of self-regulation not only applies to leaders but also influences followers. As authentic leaders demonstrate consistent alignment with their values, it can inspire followers to develop greater clarity about their own values, identity, and emotions.

- Follower development: As followers embrace and integrate the leader's values into their own belief system, their perception of what constitutes their current and potential selves undergoes a developmental shift.

- Organizational context: authentic leadership has the potential for endurance and seamless integration into the organizational context.

- Performance: authentic leaders contribute to create veritable sustained performance including the non-tangible assets as human, social and psychological capital.

Authentic leadership is defined as a foundational construct to provide a framework for a more comprehensive understanding of the fundamental processes inherent in all positive forms of leadership, what constitutes the main difference with other leadership theories as Transformational leadership.

Authentic leadership predicts employees' creativity, both directly and through the mediating role of employees' psychological capital. Research on leadership and psychological capital validates that merging authentic leadership and psychological capital may foster employees' creativity, a key element for helping organizations to face competitive challenges and improve organizational effectiveness (Rego et al., 2012)

2.3.6. Servant and Humble leadership

Servant leadership research has been growing in the last two decades with many different definitions and dimensions description. Servant leaders start with a natural

inclination to prioritize serving others, ensuring that the most crucial needs of others are addressed first (Greenleaf, 2008). After Greenleaf definition many researchers have attempted to conceptualize servant leadership. Recent review summarizes twelve dimensions to understand this leadership theory (Anderson & Sun, 2017):

Table 3: *Twelve dimensions of servant* leadership (Anderson & Sun, 2017)

Dimensions	Definition
Altruistic calling	- Spiritual purpose, aiming to make a positive impact in the lives of others through selfless service.
Persuasive mapping	- Sound reasoning and mental frameworks to analyse issues and envision greater possibilities for the future.
Courage	- Willing to take risks with new approaches to address old problems.
Agapao love	- Unconditional consideration of the whole person, valuing individuals for who they are rather than treating them as a means to an end.
Emotional healing	- Involves aiding individuals in their spiritual recovery from hardship and trauma.
Forgiveness	- Ability to let go of perceived wrongdoings.
Humility	- Understanding one's own strengths and weaknesses having insight into one's personal capabilities and areas for improvement.
Covenantal relationship	- Accepting individuals as they are with open communication and equal relationship
Ethics	- Consistently adhering to ethical principles and maintaining a strong commitment to moral values in decision-making and actions.
Authenticity	- Aligning one's public behaviour with their private beliefs and values, fostering genuine interactions, and avoiding false pretentions.
Creating value for the community	- Guide and shape the company's operations, strategies, and values in a way that benefits not only the organization but also the broader community and stakeholders
Accountability	- Setting clear expectations, providing the necessary resources and support, and holding individuals responsible for their designated tasks

Source: Google Scholar (Anderson & Sun, 2017)

Further servant leadership review gives a more comprehensive and complete new definition: *"Servant leadership is an (1) other-oriented approach to leadership (2) manifested through one-on-one prioritizing of follower individual needs and interests, (3) and outward reorienting of their concern for self towards concern for others within the organization and the larger community"* (Eva, Nathan et al., 2019b)

This definition emphasizes a critical aspect that distinguishes servant leadership from other leadership perspectives, as the intrinsic motivation behind assuming a leadership role. Servant leadership places emphasis on the leader's genuine desire to serve others and prioritize their needs, setting it apart from other approaches to leadership. The servant leader actively seeks to comprehend each follower's background, core values, beliefs, assumptions, and unique behaviours. In doing so, the boundary between professional and personal lives becomes less distinct, indicating a comprehensive approach that recognizes and values the individuality of each follower. The intentional emphasis on follower development is sustained alongside a broader concern for the larger community, reflecting a commitment to be responsible for the well-being of both followers and the community at large (Eva, Nathan et al., 2019b).

Humility is part of servant leadership described above. However, research has seen a growing interest in this specific concept of humble leadership. Humble leadership is characterized by having an accurate and realistic view of oneself, acknowledging and appreciating the contributions of followers, and modelling a willingness to learn and adapt (teachability). This leadership style emphasizes humility as a strength and recognizes the importance of collaboration and valuing the input of team members. It stands in contrast to more traditional, authoritarian leadership approaches, promoting a more inclusive and supportive leadership model (Kelemen et al., 2023). Recent studies focus on humility impact in organization. It has been demonstrated how humble leadership positively impacts innovation (Zhou & Wu, 2018), project success (Ali et al., 2020), team wellbeing (Wang, Y. et al., 2018).

2.3.7. Shared, Distributed and Participative leadership

Given the dynamic environment of organizations, structures are evolving from a hierarchical model to a more distributed way of working. In this context, a new way of analysing leadership evolves from focusing on an individual to focusing on the dynamics of a team where they collectively lead one another (Avolio et al., 2009b).

Leadership is seen as a response to the team's evolving needs and challenges, providing necessary resources for improved team adaptation and performance in subsequent cycles or stages of work. This approach recognizes that leadership is not solely an individual trait, but a collective outcome shaped by the interactions and collaborative efforts of team members (Day et al., 2004).

Figure 9: *Team leadership cycle* (Day et al., 2004)*.*
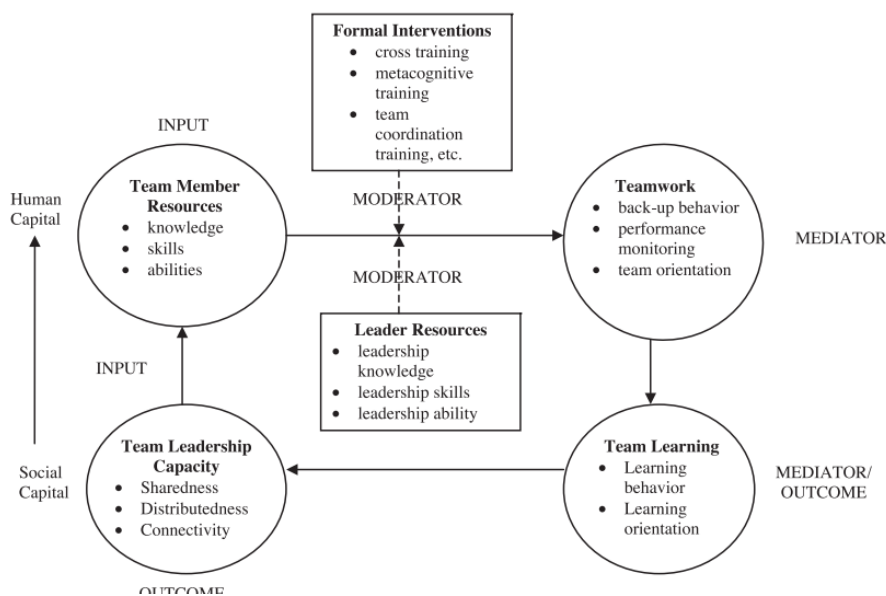
*Source: Google Scholar (*Day et al., 2004)*.*

A new leadership definition emerges as Shared leadership described as the following: *"a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both. This influence process often involves peer, or lateral, influence and at other times involves upward or downward hierarchical influence"* (Pearce & Conger, 2002).

Shared leadership is a team-oriented concept in which leadership responsibilities and influence are distributed among team members rather than being concentrated in a single designated leader. This approach emphasizes a collaborative and collective form of leadership within the team. The emergence of shared leadership is influenced by factors both within and outside the team environment. Internally, factors such as a shared purpose, social support among team members, and providing a voice to each member contribute to the development of shared leadership. Additionally, external coaching or guidance can also play a significant role in fostering shared leadership within a team (Carson et al., 2007).

Aligned with shared leadership concept, participative leadership is a type of democratic leadership that involves team members in both decision making and management of the organization, allowing all employees to increase their sense of belonging so that their personal objectives become the objectives of the organization (Jing et al., 2017). One of the main elements of this type of leadership is encouraging to collaborate in the management process and being able to include employees in the decision-making process (Benoliel & Somech, 2014). New framework for participative leadership has been defined to understand all the elements that impact in this type of leadership, specifically the mediators which refer to different psychological theories briefly described below (Wang, Q. et al., 2022a):

- Social exchange theory (Cook et al., 2013) through which employees respond positively when they participate in the management process based on reciprocity principle, that impact in better outcomes (Xiang & Long, 2013).

- Conservation resources theory may explain employees' answer to participative leadership when they see potential benefits or potential losses (Jian et al., 2021).

- Social cognitive theory: based on this theory, employees' cognition and behaviours are a result of environment context and information received from it. In the participative leadership style, as the leader involves the team to take decisions, they may adapt their self-perception and cognition and thus, their behaviours, based on the leaders' actions and expectations. That is to say, if the leaders consider relevant employee's criteria, they may feel more relevant and motivated to act. Participative leadership has positive effect on employees such us increasing self-efficacy, psychological safety and innovation (Zou et al., 2020). The main idea in this social cognitive is that an individual is able to adapt thoughts, motivation and behaviours and that occurs in the leadership process (McCormick, 2001).

- Social information processing theory: this theory explains how individual behave regarding context information and certain rules and values, and leaders is a crucial element of information for employees to evolve their beliefs and behaviours. If leaders implement a participative management approach, it will impact on employees to do so (Odoardi et al., 2019).

- Implicit leadership theory: Implicit Leadership Theory provides insights into how individuals perceive leadership and make judgments about leaders, highlighting the role of implicit beliefs and prototypes in shaping these perceptions (Lord et al., 2020). Leaders who aim to implement participative leadership must ensure behave according to participative principles to motivate employees to participate actively in this process (Lam et al., 2015a)

Framework in next figure includes the antecedents, mechanisms (mediator and moderator), and consequences of participative leadership and aims to provide a clear overview of the factors that influence participative leadership, how it works and the outcomes or consequences of this leadership style.

Figure 10: *Participative leadership framework* (Wang, Q. et al., 2022a)
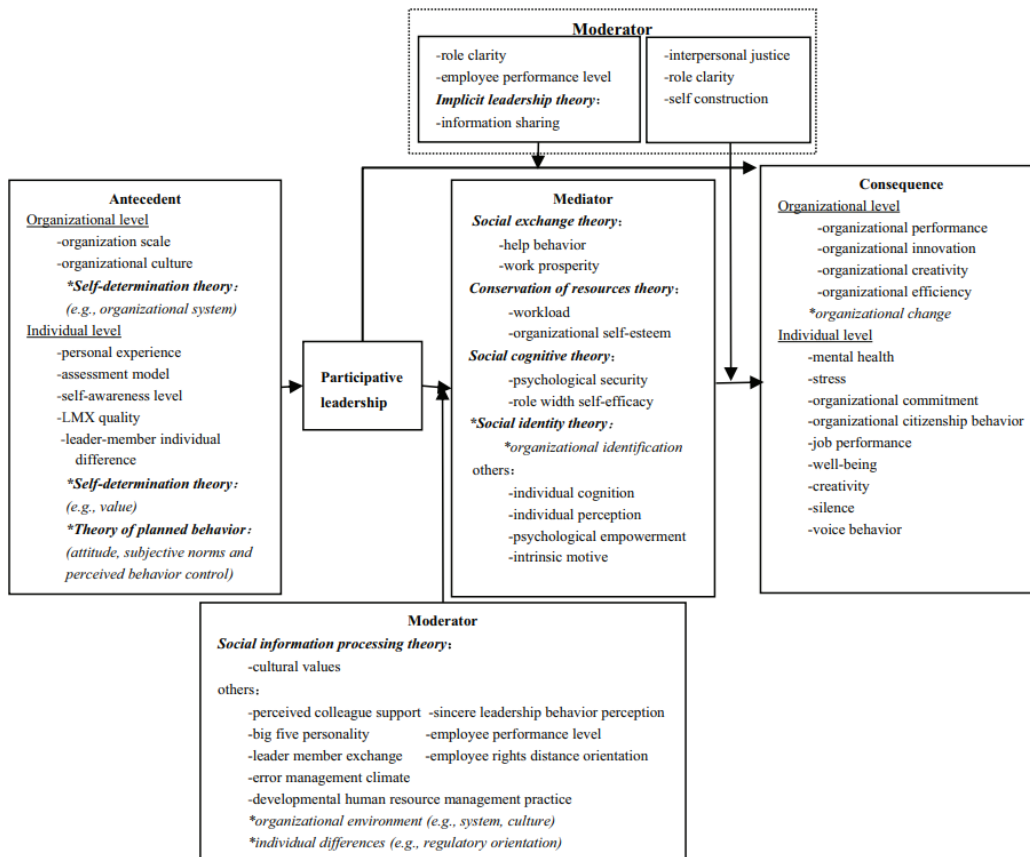
Source: Google Scholar (Wang, Q. et al., 2022a)

2.3.8. Destructive leadership theories

There has been a great proliferation of theories in the leadership literature in recent years, although not much attention has been paid to the negative effects that leadership can have (Vogel et al., 2021). Some researchers have studied different models of destructive leadership until a definition and theoretical model was proposed by Krasikova 2013:

"Destructive leadership is defined as volitional behaviour by a leader that can harm or intends to harm a leader's organization and/or followers by (a) encouraging followers to pursue goals that contravene the legitimate interests of the organization and/or (b) employing a leadership style that involves the use of harmful methods of influence with followers, regardless of justifications for such behaviour" (Krasikova, Dina V. et al., 2013):

Different studies have approached the examination of Destructive Leadership from various perspectives, highlighting different manifestations of this type of leadership within an organization or team summarised below. Any form of this type of leadership has relevant negative consequences on followers psychological and physical health and job satisfaction (Tepper, 2000) which will affect organizational performance in the medium term.

Table 4: *Constructs capturing the phenomenon of Destructive Leadership* (Krasikova, Dina V. et al., 2013)*:*

Type of destructive leadership	Description
Abusive supervision	This behaviour may involve using harsh language, expressing hostility through nonverbal cues like facial expressions or body language, and creating an overall negative and confrontational atmosphere (Tepper, 2007)
Petty tyranny	Using authority for personal gain is an abuse of power, and belittling followers (Reed & Bullis, 2009)
Pseudo transformational leadership	Leadership that emphasizes personal goals over follower needs and organizational objectives and relies on the use of manipulation, deception, and coercion (Bass & Steidlmeier, 1999) (Price, 2003)
Personalized charismatic leadership	Leaders' focus on self-interest, manipulation, disempowering followers, curbing their intellectual independence, and intentionally creating imbalanced relations with followers (O'Connor et al., 1995) (Popper, 2002)

Strategic bullying	Methods of influence intended to portray a specific image and position targets in a submissive, powerless state, making them more susceptible to influence and control, with the aim of achieving personal and/or organizational objectives (Ferris et al., 2007)
Managerial tyranny	Leader's distinct, obsessive, clear vision and the unwavering, determined methods employed to guide the organization toward realizing this vision (Ma et al., 2004)

Source: Google Scholar (Krasikova, Dina V. et al., 2013)*:*

Specific attention has received the Narcissism Leadership in literature since many powerful leaders are considered narcissists, which is a personality trait that reflect grandiosity, arrogance, self-absorption, entitlement, fragile self-esteem, and hostility. Narcissists, motivated by strong desires for power and prestige, are often found in leadership positions and we can find in literature the two versions of narcissistic leadership, one that has a constructive effect and the other that has a destructive effect (Stein, 2013).

This type of leadership was defined by Rosenthal et. Al (2006) as follows: *"Narcissistic leadership occurs when leaders' actions are principally motivated by their own egomaniacal needs and beliefs, superseding the needs and interests of the constituents and institutions they lead"* (Rosenthal, Seth A. & Pittinsky, 2006). While narcissistic leaders may be perceived as effective due to their authoritative image, their narcissism actually hinders information exchange among group members, thereby adversely affecting group performance (Nevicka et al., 2011). Individuals with higher levels of narcissism may be initially perceived as leaders in unfamiliar, leaderless groups. However, these positive perceptions are short-lived, and over time, these individuals often experience a shift toward negative perceptions from their followers (Ong et al., 2016). Narcissistic leadership is generally seen as negative, but in situations of uncertainty this type of leadership is accepted because it can reduce uncertainty (Nevicka et al., 2013) however, narcissistic rivalry impairs the leader's effectiveness in the medium term due to the focus only on

self-interest and lack of concern for others (Lynch & Benson, 2023) and the creation of less collaborative cultures with less emphasis on integrity (O'Reilly III et al., 2021).

Another destructive leadership theory is the named Toxic leadership, which was defined as "individuals, who by dint of their destructive behaviours and dysfunctional personal qualities, generate a serious and enduring poisonous effect on the individuals, families, organizations, communities, and even entire societies they lead" (Lipman-Blumen, 2005). Einarsen (2007) defined a conceptual framework to describe leadership based on destructive behaviours in three categories such as tyrannical, derailed, and supportive-disloyal leadership (Einarsen et al., 2007). Despotic leadership theory emerged looking at leader's social responsibility (De Hoogh & Den Hartog, 2008). All these types of destructive leadership have negative effects on subordinates undermining motivation, well-being, job-satisfaction, and performance (Einarsen et al., 2007) and it could affect the entire organisation.

Three main factors contribute to destructive leadership emergence which are goal blockage, leader characteristics and organizational context as it is described in figure below. The appearance of destructive behaviours in leadership occurs when personal objectives are threatened. When there is a predisposition to justify aggressive behaviour, it biases the interpretation of others' actions towards harmful ones, as well as negative trait affectivity and paranoid tendencies. In addition to this, certain organizational circumstances may affect these behaviours when lack of resources occur, and the sense of goals blockage arise (Krasikova, Dina V. et al., 2013). There are three main characteristics that emphasizes self - interest over others which are Machiavellianism, narcissism, and psychopathy what is named "Dark Triad" (Furnham et al., 2013).

Figure 11: *Destructive leadership theoretical model* (Krasikova, Dina V. et al., 2013).
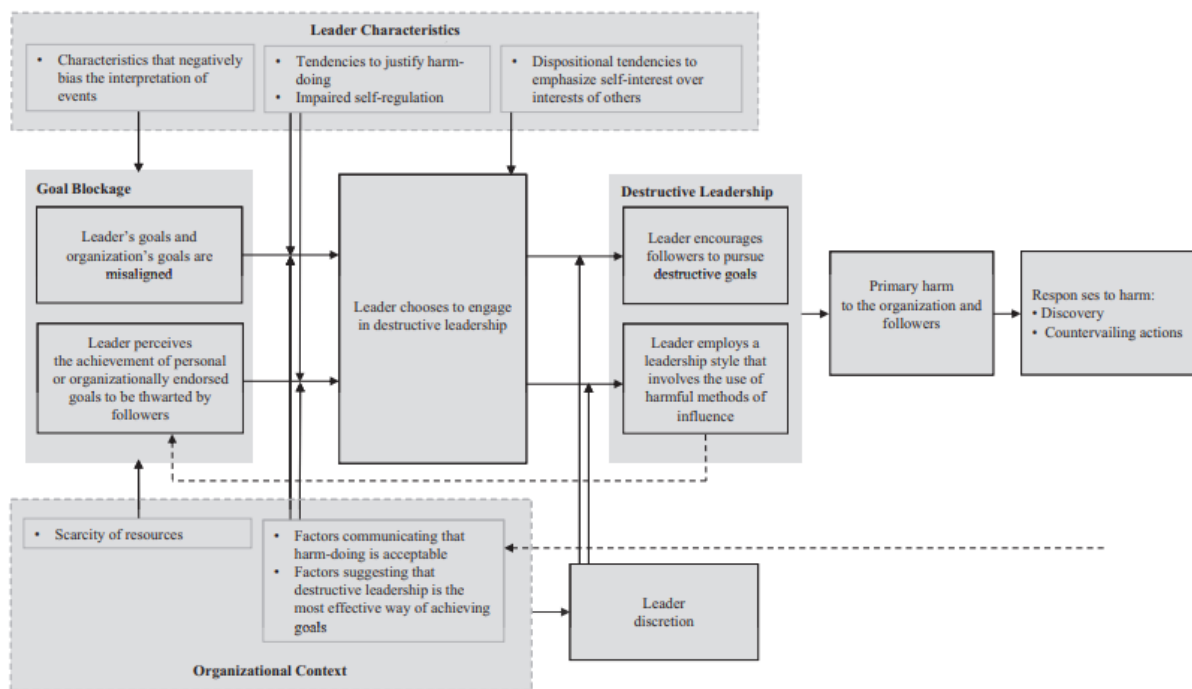
Source: Google Scholar (Krasikova, Dina V. et al., 2013).

2.3.9. Social identity theory

There is no leadership if no one follows, so, leadership is essentially a group process (Platow et al., 2015). Since main role of leaders is achieving organizational goals, leadership is related more to group objectives than individual ones and it takes place in the context of a group membership, and part of the effectiveness of leadership depend on how followers perceive the leader as a member of their group (Van Knippenberg, Daan & Hogg, 2003)**.** This is based on social identity approach, which is a theoretical framework that encompasses compatible social-cognitive, motivational, social-interactive, and societal level theories to explain the relationship between self-conception and group and intergroup phenomena, since people define themselves not only at individual level but also as part of a group, and this group member definition enables group-based influence and group-oriented motivation (Abrams & Hogg, 2001). So, in this context, where leader is part of a group, leadership effectiveness and the perception of its team will have more

effect to the extent that the leader is perceived to be the prototype of the group and the leader demonstrates that he or she acts in the best interest of the group. This is the base of the Social Identity Model of Organizational leadership (Van Knippenberg, Daan & Hogg, 2003)**.**

Figure 12: *Social identity Model Organizational Leadership* (Van Knippenberg, Daan & Hogg, 2003)
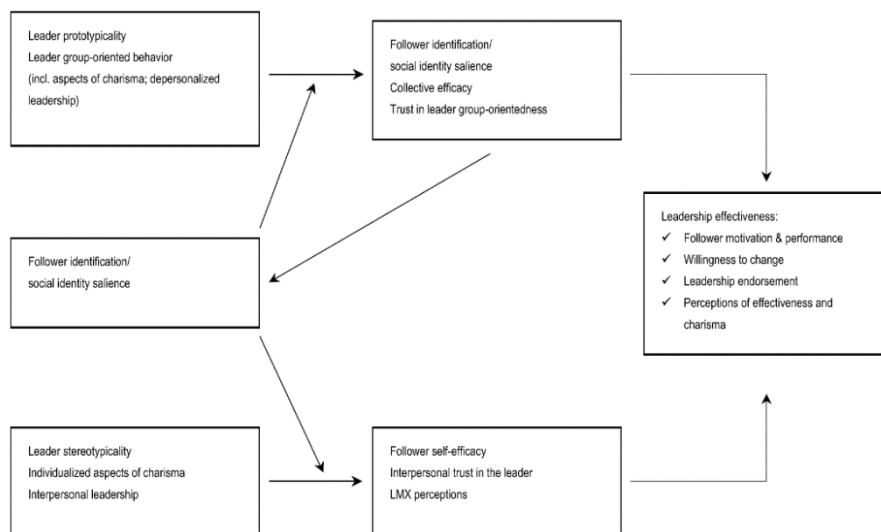
Source: Google Scholar (Van Knippenberg, Daan & Hogg, 2003)

This model proposes that in those relevant groups where there is a social identity, the more the leader is identified with the group, and the more he/she acts in the interests of the group, the more effective he/she will be, and the more the leader's individual characteristics lose relevance. The leader must know how to manage this process and get strategically involved in the group to build and maintain effectiveness, being able to get involved in the very creation of the social identity and its relevance in the organization. Leadership is exercised through group influence, leadership will have greater potential the greater the us-in-context social identity, and the attributes associated with leadership such as trust, charisma, fairness can be understood as results of group membership (Platow et al., 2015). More recent review on this theory

demonstrates the more idealized the social identity of the group, the more effective the leadership will be, and this is part of the leaders' social influence, and the stronger the group's identity, the greater the impact of the leaders' prototypicality (Steffens et al., 2021).

2.4. Leadership competencies and behaviours

Leadership effectiveness has been extensively explored in the literature through a growing body of empirical research, consistently substantiating the notion that specific traits serve as significant predictors of successful leadership. Furthermore, leadership prediction is more effective through a combination of traits and attributes than specific independent characteristics (Zaccaro, 2007). The utilization of multisource 360 feedback has become a widespread practice for measuring leadership and assessing leadership effectiveness trough traits and behaviours valuation feedback. This approach serves as a valuable tool to guide the implementation of human resource policies for employee development purposes but has increasingly been used also for performance management (Campion et al., 2015).

In this chapter we review the concept of competency, some of the most relevant studies in behavioural models, as well as a more in-depth review of the five skills analysed in this research evaluated via 360-degree feedback data, behaviours that are found in literature as key competencies for effective leadership.

A new concept of competency was introduced by McClelland (1973) through which he pointed out that various factors, such as personal attributes, motives, experience, and other characteristics, differentiate excellent performers from average ones (McClelland, 1973). In the business environment Spencer and Spencer (2008) defined competency as individual characteristics that impact job performance and developed a job-competence assessment method to encourage organizations to focus on skills development that led to better performance (Spencer & Spencer, 2008). Since then, many definitions of

competencies have been done and an increasing number of scholars have dedicated their research efforts to study global leaders trying to identify the key competencies that play a crucial role in the success of these leaders both local and on a global scale. There are multiple approaches in literature regarding global competency models which offer different perspectives of global leadership definition. (Park, S. et al., 2018).

Specifically focused on global leadership, Kets de Vries (2014) designed a 360-degree leadership feedback instrument named GlobeInvent (Global Leadership Life Inventory) through extensive research with executives from all over the world INSEAD. This study revealed that most effective leaders have both charismatic and architectural roles, which implies envisioning a future empowering teams while defining necessary process to implement the vision. Twelve dimensions of behaviours were identified (Kets de Vries et al., 2004).

Table 5: *GlobeInvent dimensions* (Kets de Vries et al., 2004)

Dimension	Description
Envisioning	- Define a vision, mission and strategy compelling all stakeholders
Empowering	- Empower stakeholders by sharing information and involving them into decision-making process
Energizing	- Motivate and energize the organization on the vision
Designing	- Create the framework and organization processes to execute the vision
Rewarding	- Ensuring adequate reward model and constructive feedback to the team
Team building	- Team member creation and collaborative environment
Outside orientation	- Reinforcing the need to engage with external stakeholders, customers, providers, communities
Global mindset	- Connecting global and local priorities
Tenacity	- Encouraging tenacity and taking risks

| Life balance | - | Ensuring appropriate balance personal and professional life |
| Resilience to stress | - | Paying attention to career, life and health issued |

Source: Google Scholar (Kets de Vries et al., 2004)

Bird (2017) suggests in his research a categorization in three key areas of competencies after analysing more than 200 competences that impact in global leadership success: a) Business and organizational management; b) People and relationships; c) Self-management. This study provides a comprehensive framework for understanding the multifaceted nature of global leadership success. Each category encompasses a range of competencies essential for effective leadership in a multinational and global context (Bird, 2017).

When competences have been empirically analysed trough different countries, commonalities have been found regarding leadership success. In an investigation involving 9,942 managers across 40 countries and their competencies, findings indicated cross-national convergence where resourcefulness, change management, and building and mending relationships were highly valued universally among managers (Gentry & Sparks, 2012).

More recent research between three specific countries across different continents, identified common key behaviours such as living up to commitments, prioritizing results, making timely decisions, and possessing job knowledge that were consistently associated with high managerial job performance in the examined countries (Paetzel et al., 2019). A global review of leadership literature to identify commonalities in core dimensions, 14 global competency model were examined, and five common categories of competencies were identified (Park, S. et al., 2018).

Table 6: *Common themes competency model review* (Park, S. et al., 2018)

Common theme	Description
Change and vision	- Envisioning and embracing change for achieving organization success
Interpersonal	- Relationship management, networking, emotional intelligence, partnership building and communication skills
Global	- Global mindset and knowledge, cognitive complexity, and cosmopolitanism
Intercultural	- Ability to understand cultural differences and work effectively in another culture
Personal traits and values	- Personal attributes that include integrity and ethics, flexibility, and openness

Source: Google Scholar (Park, S. et al., 2018)

In this review, 11 local empirical studies on effective leadership were analysed across different countries to identify key managers behaviours trough Yukl's framework (Yukl, 2008b) that include the following common type of behaviours in all studies:

1. Task-oriented behaviours that include planning, clarifying, monitoring, and problem-solving. Effective leaders prioritize, organize, and schedule work, develop and communicate clear, specific task goals and assignments, assess work progress and procedures, and identify the root of the problem and make decisions for solutions.

2. Relationship-oriented behaviours: supporting, recognizing, developing, empowering, and encouraging innovation. Effective leaders interact with others, cultivate relationships, understand their impact on others, highlight the positive and recognize good performance, train successors, delegate well, and consult with staff.

3. Change-oriented behaviours: envisioning change, advocating change, facilitating collective learning, and managing the changes required to realize a vision.

Effective leaders need to be competent in inspiring others, envisioning change, and dealing with complexity to deliver successful change efforts in a complex or uncertain environment.

4. External behaviour: networking, external monitoring, representing, and responding to identified customer needs. Effective leaders build interpersonal relationships, build teams, collaborate with suppliers or clients, and take responsibility for their own or group's actions.

These behaviours are considered universal and convergent because they are essential skills, knowledge, and personality traits and attitudes grounded in diverse dimensions of leadership behaviours. They are applicable across cultures and contexts and are critical for effective leadership and management in dynamic and complicated global contexts. Besides these common dimensions, a divergence was found suggesting a potential divergence or a locally specific feature of effective leadership behaviours categorized under nine themes, including managing emotions, building personal relationships, and demonstrating care, highlighting expertise and intelligence, openness and information sharing, fairness, approachability and trustworthiness, and flexibility (Park, S. et al., 2018).

Table 7: *Framework Core dimensions, Competency and Behaviours of effective Global Leaders* (Park, S. et al., 2018).

vork: Core Dimensions, Competency, and Behaviors of Effective Global Leaders.

Effective global leader behaviors	Task: Plan/clarify/monitor/solve	Relationship: Support/develop/ recognize/empower	Change: Envision/encourage/ advocate/facilitate	External: Network/watch/ represent/ally
Convergent: • Intercultural competence; • Emotional intelligence; • Social/networking skills; • Virtual teamwork; • Global mind/knowledge; • Ethics; • Openness/flexibility; and communication	• Prioritize, organize, and schedule • Provide a clear direction • Clarify purpose and expectations • Manage time, resources, and plans • Assess quality, output, and progress • Identify problems, causes, and resolve them	• Respond quickly and help employees • Listen to employees' needs • Recognize and reward • Coach and mentor • Delegate and consult • Create and share knowledge • Promote learning	• Lead with a vision • Introduce innovations • Advocate for change • Adapt work conditions • Motivate and celebrate	• Engage and develop (outside) partnerships • Respond to customer needs • Scan and analyze environments • Manage opportunities and risks • Evaluate trends and technology • Protect members
Culture-distinctive: • Ethics, morals, and standards; • Care and personal relationships; • Organizational knowledge	• Build global and organizational expertise • Share information	• Show concern for others • Connect emotionally with subordinates • Build personal and close relationships • Treat others fairly and equally • Build trust	• Manage emotions and have integrity • Commit to morals and standards • Flexible • Promote fairness • Open communication • Accessible	• Behave as a role model

Source: Google Scholar (Park, S. et al., 2018)*.*

Table 8: *Summary main competence models*

GlobeInvent dimensions (Kets de Vries et al., 2004)	Common theme competency model reviw (Park, S. et al., 2018)	Core dimensions, Competency and Behaviours of effective Global Leaders (Park, S. et al., 2018)
Envisioning	**Change** and vision	**Task**: plan, monitor, solve
Empowering	**Interpersonal** skills	**Relationship**: support, empower
Energizing	**Global** mindset	**Change**: Envision, encourage, facilitate
Designing	**Intercultural** abilities	**External**: network, watch, ally
Rewarding	**Personal** traits and values	
Team building		
Outside orientation		
Global mindset		
Tenacity		
Life balance		
Resilience to stress		

Source: Own elaboration

2.4.1. Five Leadership behaviours

This empirical research is focused on five core leadership behaviours that are measured consistently across the entire organization in various countries through 360-degree feedback instrument. These behaviours are determination, embrace change, collaboration, customer focus and communication. The standardized evaluation process in the empirical case we are analysing provides a valuable foundation for understanding leadership effectiveness and identifying patterns or variations in leadership styles across this organization. Connecting these behaviours with the previously mentioned framework and existing competence and behaviours literature, may offer an empirical view of how established models and theories regarding global leadership competence model apply in the reality of a multinational company.

Table 9: *Summary five behaviours measured in this research*

Determination	• Ability to make things happen, plan, organize and execute • Related to **"Task oriented"** competencies • Connected with **"Self-determination theory"** (Ryan & Deci, 2000) • Characteristic of **Transformational** and **Authentic** leadership
Embrace the change	• Ability to innovate and plan new ways of doing • Connected to **"Change- oriented"** competencies • Change management requires also Aversion to change management (Carnall, 1995) and dealing with Comfort Zone (White, 2009) • It is key trait present in **Charismatic and Transformational** leadership
Collaboration	• Ability to work with others to achieve common goals • Related to **"Relationship - oriented"** behaviours • Connected with **Collaboration Theory** (Puxman, 1996) • Present in **Participative leadership** (Wang Q. et al., 2022)
Customer focus	• Ability to work with a customer-oriented approach creating trust • Related to **"External - oriented"** competences • Connected with **"Customer Knowledge Management"** (Gibbert et al., 2002)
Communication	• Ability to communicate with respect creating a trust environment • Related to **"Internal - oriented"** competencies (Park, 2018), (Ket de Vries, 2004) • Key competence in all types of leadership

2.4.1.1. Determination

The ability to be proactive, take initiatives responsibly, and make things happen in a simple and organized manner is determined by an individual's capacity for strategic planning, proactive decision-making, and efficient execution of tasks. These behaviours connect with "Task oriented" previous theme. This taking charge concept is aligned with empowering leadership which is particularly relevant when change-oriented behaviour needs to be reinforced for the organization success versus directive leadership (Kim et al., 2023). This determination might also be connected to self-determination theory, where the foundational premise posits that humans are inherently active and growth-oriented organisms naturally inclined to integrate their psychological elements into a unified sense of self and embed themselves into larger social structures. These social structures play a crucial role in meeting fundamental needs for competence, relatedness, and autonomy which are directly linked to positive outcomes. This effect is particularly positive when individuals pursue goals aligned with intrinsic life goals, on the

contrary, goals associated with extrinsic life goals do not exhibit the same positive impact on mental health (Ryan & Deci, 2000). In the work environment, this is connected to transformational leadership behaviours. Transformational leaders tend to transform the business by communication passionately implementing activities, goals, working with a deeper significance and purpose, what contributes to a greater sense of fulfilment, engagement, and motivation among individuals (Forner et al., 2020). Transformational leaders who address and cover the fundamental needs of their followers, competence, relatedness, and autonomy, contribute to increased work engagement, commitment, and job satisfaction among their team members. This highlights the importance of leaders fostering an environment that supports the basic needs of individuals for optimal workplace outcomes (Gözükara & Şimşek, 2015). Unlike the visionary and inspirational aspects of transformational leadership, transactional leadership is often focused on more tangible, day-to-day interactions and exchanges between leaders and followers which have less intrinsic motivation and lead to fewer effective outcomes (Hetland et al., 2011). Self-determination is also present in Authentic leaders trough the self-awareness concept which results in increased self-acceptance, building positive relationships and facilitating personal growth and self-development. Authentic behaviours and actions are inherently self-determined, reflecting an alignment with one's true self and values (Ilies et al., 2005). *'The authentic leader is confident, hopeful, optimistic, resilient, moral/ethical, future-oriented, and gives priority to developing associates to be leaders. The authentic leader is true to him/herself, and the exhibited behaviour positively transforms or develops associates into leaders' themselves'* (Luthans & Avolio, 2003b).

Figure 13: *Basic Self-determination theory in the workplace* (Deci et al., 2017)
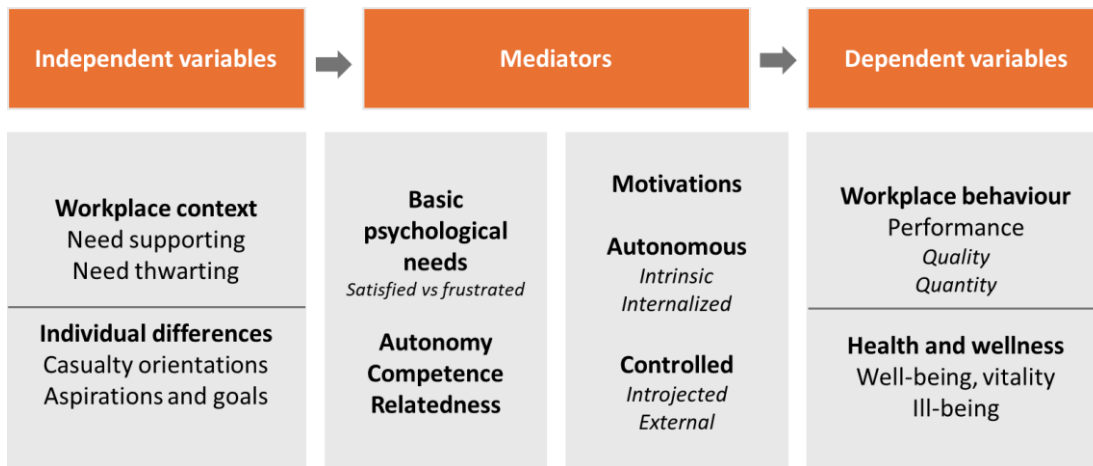
Source: Google Scholar (Deci et al., 2017)

2.4.1.2. Embrace change

Seeking new challenges and exploring innovative ways of doing things as a business opportunity for growth. Embracing change, identifying novel avenues, and being open to innovation can contribute to business expansion and development. This competence is related to "Change-oriented" behaviours previously mentioned. This concept of change management has been widely researched due to it is defined as a core competency to foster competitive advantage (Zaccaro & Banks, 2004a). Competitive advantage is forged when managers successfully implement change, aligning with long-term strategic objectives while addressing the immediate challenges of short-term management posed by profound crises. This dual focus on strategic vision and short-term adaptability is crucial for sustained success and resilience in the face of adversity (Llop & García-Arrizabalaga, 2014). Thus, organizational change has evolved into a complex and challenging process, where the attitudes and beliefs of employees toward change play an increasingly crucial role. Recognizing and understanding the perspectives of employees is essential for navigating the complexities of change successfully. Effective

change-agile leaders respond to shifts in the business environment by capitalizing on opportunities discarding outdated models and innovating new approaches to conducting business, cultivating a culture where change thinking becomes contagious (Onderick-Harvey, 2018a).

Indeed, being an agent of radical change is a key characteristic of charismatic leadership, which is characterized by its willingness to take personal risks and visionary, idealistic outlook on the future. These qualities contribute to the ability to inspire and motivate followers, creating a sense of purpose and excitement around transformative initiatives. Charismatic leaders are not only change agents but also individuals who are willing to embrace risks and articulate a compelling vision that captivates and energizes those they lead (Conger & Kanungo, 1998b). This concept is also aligned with transformational leadership, which stands as one of the most extensively researched leadership theories. Transformational leadership introduces a new paradigm that encompasses charismatic, visionary, inspirational, and change-oriented leadership (Bass & Bass Bernard, 1985a). This theory emphasizes the leader's ability to inspire and motivate followers toward achieving collective goals, fostering positive change and innovation within the organizational context. The transformative approach transcends traditional leadership styles by focusing on the leader's capacity to create a shared vision and elevate followers to higher levels of performance and commitment (Bryman, 1992). Research has revealed a deeper association between transformational leadership and commitment to change compared to specific change practices, particularly when the change has a personal impact. This underscores the influential role of transformational leadership in fostering commitment to change (Herold et al., 2008). Examining various organizations has demonstrated that transactional leadership plays a significant role in fostering innovation within smaller and less complex organizations. Conversely, transformational leadership has been shown to be more effective in larger organizations when it comes to encouraging and driving innovation. The effectiveness of leadership styles is context-dependent, aligning with the scale and complexity of the organization (Vaccaro et al., 2012)

In the changing and challenging competitive environment in which organizations must play, ability to vision the future and embrace change in organization is vital. As John Kotter described in his book "What Leaders Really Do" (1999, p.51*): "They don't make plans: they don't solve problems; they don't even organize people. What leaders really do is prepare organizations for change and help them cope as they struggle through it."* (Kotter, 2000). Preparation for change is crucial part of anticipatory leadership which aim to transform the mindset of leaders' trough new framework of skills and capabilities such as awareness, authenticity, audacity, adaptability, and action (Ratcliffe & Ratcliffe, 2015). Change may also be supported by creating a positive environment levering in psychological resources as hope, trust, self-efficacy, and resilience (Alavi & Gill, 2017). However, although leadership is key to promote change management in an organization, certainly, various leadership styles can serve as promoters in change management processes (Mansaray, 2019).

Promoting change also means to manage change aversion environment and comfort zone context. The consequences of staying within the comfort zone include resistance to change, lack of motivation, limited performance, fear of failure, missed learning opportunities, and potential stagnation and complacency. Recognizing these consequences highlights the importance of stepping out of one's comfort zone to embrace change, pursue growth opportunities, and achieve personal and professional development (White, 2009b)

Managing change in organizations may involve understanding resistance to change from collaborators. Carnall (1995) described the Coping Cycle in management change which consists of five stages that individuals go through when faced with significant changes:

- Denial: Initially, individuals may deny the need for change, feeling comfortable in their current state and experiencing fear and anxiety towards change.
- Defence: In this stage, defensive behaviours emerge as individuals try to resist change and force the new reality into the old model, leading to a decline in performance.

- Experimentation: Individuals start experimenting with new ways of working and may exhibit ritualistic behaviours to defend the old ways while trying to come to terms with change.

- Decision: This stage involves making decisions about adopting new methods and letting go of old practices, paving the way for internalization.

- Internalization: Individuals adopt and adapt the new working methods, making them their own, leading to a sustainable level of performance and a new comfort zone.

Understanding and navigating these stages are essential for effectively managing change and supporting individuals in transitioning to new ways of working (Carnall, 2007). Facing these cycles, it is crucial to adapt management and leadership style to optimize effectiveness and performance. Specifically, it is key acknowledging that changes in an organization significantly impact individuals' self-esteem, which in turn affects their performance, and rebuilding self-esteem is a relevant task for leader to enhance performance post-change. White (2009) adapts management styles to Coping cycle and comfort zone development phase-. Adapting management style to the coping cycle involves understanding the stages individuals go through when faced with change and tailoring leadership approaches to support them effectively. Here are some strategies for adapting management style to the coping cycle:

- Recognize the stages: Understand the five stages of the coping cycle (denial, defence, experimentation, decision, and internalization) and recognize where individuals may be in their journey of coping with change.

- Provide Support and Guidance: Offer support and guidance to individuals in each stage of the coping cycle. For example, during the denial stage, provide reassurance and communicate the need for change clearly.

- Encourage Open Communication: Foster open communication channels to allow individuals to express their concerns, fears, and challenges as they navigate through the coping cycle. Listen actively and address their needs.

- Facilitate Experimentation: Encourage individuals to experiment with new ways of working during the experimentation stage. Provide opportunities for learning, training, and trying out different approaches.

- Facilitate Decision-Making: Support individuals in making decisions about adopting new methods and letting go of old practices. Provide guidance, resources, and feedback to help them through this stage.

- Celebrate Progress and Success: Acknowledge and celebrate milestones and achievements as individuals progress through the coping cycle. Recognize their efforts and accomplishments to boost morale and motivation.

- Promote a Culture of Adaptability: Foster a culture that embraces change and encourages continuous learning and adaptation. Help individuals see change as an opportunity for growth and development.

By adapting leadership to the coping cycle, leaders can effectively guide individuals through the process of change, support their transition to new ways of working, and enhance performance and organizational resilience (White, 2009b).

Table 10: *Correlation of management styles and development phase* (White, 2009b)

Development Phase	Key characteristics	Management style	Key characteristics
Transforming			
Forming/ Denial	Unwilling/unable, defensive, fearful, resentful	Commanding	Clear goals, clear delivery methodologies, fairness, firmness
Storming/ Defence	Willing/ unable, defensive, challenging, aggressive, argumentative	Cooperative	As above, plus encouraging participation, calmness, recognition of concerns
Norming/ Discarding	Unwilling/able, finding solutions, lack of self-confidence	Motivational	Encouraging, confidence building, clear goals, performance monitoring
Performing			
Performing/ Adaptation	Willing/able, works independently, confident	Directive	Clear goals setting, monitoring, strategic preparation, seeking innovative approaches, empowering team members
Reforming			
Adjourning/ internalization	Disengaging, seeking new comfort zone, needs and goals	Collaborative	Establishing new goals, solving confusion, managing risks

Source: Google Scholar (White, 2009b)

2.4.1.3. Collaboration

Collaboration means working together with peers fostering teamwork to achieve common goals and collective success. This might connect with "Relationship-oriented" behaviours. Collaboration theory argues that trough collaboration an advantage is gained when achievement exceeds what any individual could have accomplished highlighting the unique and enhance outcomes that emerge from collective effort (Huxham, 1996). Leadership plays a crucial role in orchestrating and guiding the processes involved in collaborative endeavours supporting organization to work effectively together.   Establishing trust, navigating power dynamics, facilitating effective communication, and addressing diverse and conflicting interests are central activities in leadership on collaboration. These activities may involve four main approaches to support collaboration which are: embracing the right kind of members, empowering members to enable participation, involving and supporting all members and mobilizing members to make things happen. But leadership on collaboration also means to manage complexities when people do not want to collaborate, adopting more pragmatical approaches such as manipulating collaborative agenda and playing the politics (Vangen & Huxham, 2003). Some skills are crucial to be an effective collaborator, such as effective communication, active listening, understanding, and empathizing. Additionally, skills such as influencing, negotiating, building trust, and networking are key to succeed in collaboration. To this end, key personal traits are required, being respectful, honest, open, tolerant, approachable, reliable, and sensitive are particularly crucial in fostering positive and effective collaboration (Williams, 2002). Morse (2014) in the context of public sector in a collaborative context, emphasized attributes as passion for results, system thinking and humility (Morse, 2014). Collaboration is also a characteristic of participative leaders which are autonomous, openness, that encourages employees to participate actively to provide new ideas as part of the decision-making process (Lam et al., 2015b). Participative leadership emphasizes collaboration, inclusion, and shared decision-making, aiming to enhance employee involvement and commitment encouraging and supporting to actively engage in the decision-making process, and it has gained growing

attention in both theoretical and practice (Wang, Q. et al., 2022b). Empirical evidence has demonstrated the participative leadership impact in job satisfaction (Chan, 2019) and psychological empowerment (Park, B. & Shin, 2021). Research in new ventures showed that adopting participative leadership by CEOs is crucial to cultivate trust in the organization that lead to overall success (Eva, Nathan et al., 2019a).

2.4.1.4. Customer focus

Customer Focus means taking care of customer relationships and consistently delivering the best for building trust and loyalty among customers and stakeholders as a way to contribute to long-term relationships. This dimension might embed in "External behaviour" competence outlined before. Around customer focus, the concept of "Customer Knowledge Management" emerges, which was defined as *"continuous strategic process by which companies enable their customers to move from passive information sources and recipients of products and services to empowered knowledge* (Gibbert et al., 2002). Gilbert (2002) defined 5 different styles of Customer Knowledge Management application: prosumerism, group learning, mutual innovation, communities of creativity, and joint intellectual capital. This author also identified two main barriers to its application, which are cultural challenge and competency challenge. Leadership is a driving force that should guide the organization through the cultural challenge of becoming customer-oriented, shaping a responsive and customer-centric organizational culture involving a fundamental transformation in mindset, values, and practices, and effective leadership is essential in driving and navigating this change. This challenge usually become into three main reactions to manage, which are 'corporate narcissism', lack of a critical perspective or 'corporate shyness' (Gibbert et al., 2002). Recent literature review regarding customer knowledge shows the growing importance in literature in this field and define a framework that summarizes antecedents, consequences, and moderators (Ourzik, 2022).

2.4.1.5. Communication

Communication skills enable expressing ideas with respect and creating an environment where individuals feel comfortable giving and receiving feedback as a way to create a positive and open communication culture. Communication encourages constructive dialogue, fosters collaboration, and contributes to a healthy and dynamic work environment. This ability is included in the Interpersonal theme identified in previous dimension framework by Park (2018). This ability is essential for effective leadership as it was highlighted by Ket de Vries (2004) being part one of the key competencies which refer to empowering: giving workers voice by empowering them through the sharing of information, giving constructing feedback and fostering trust by knowing how to deal respectfully and understandingly with other (Kets de Vries et al., 2004).

The way leaders communicate has a significant impact on leadership-related outcomes, and this influence is partly mediated by the leadership styles employed. Charismatic and human-oriented leadership styles are primarily characterized by a communicative approach, emphasizing interpersonal interactions, inspiration, and relationship-building. In contrast, task-oriented leadership tends to be less communicative, focusing more on the efficient completion of tasks and achieving objectives. The communication styles associated with these leadership approaches reflect their respective priorities in engaging with and directing team members (De Vries et al., 2010). Essentially, being a leader involves possessing effective communication skills. The ability to communicate clearly, inspire others, and navigate various communication challenges is integral to successful leadership (Barge & Hirokawa, 1989). The effectiveness of communication is determined not just by the frequency or quantity of communication but by how well the message is conveyed, understood, and its impact on the recipients. High-quality communication involves clarity, empathy, and the ability to convey information in a manner that resonates with the audience. Effective communication encompasses more than just verbal fluency; it involves the skill to convey information in a manner that resonates with the recipient emotionally and cognitively (Bass & Bass, 2009).

Communication style has been defined as *"the way a person sends verbal, paraverbal, and nonverbal signals in social interactions denoting a) who s/he is or wants to (appear to) be, b) how s/he relates to interactants, and c) in what way his/her literal messages should be interpreted."* De Vries (2009) created a framework to define 6 different communication style based on three staged deep research in Dutch university that might be useful to define the best communication approach in effective leadership:

- Preciseness: A mix of clarity conciseness, efficiency, and a businesslike composure are essential elements of effective communication in various professional settings. Clear and concise communication helps convey information efficiently, allowing for a better understanding of messages. The businesslike composure adds a professional tone to the communication, contributing to a more effective and impactful exchange of information.

- Reflectiveness: it suggests a communication style that is characterized by thoughtfulness and contemplation. This factor indicates a communicative approach that involves active engagement, analytical thinking, and perhaps the expression of philosophical or poetic reflections. Such a style may contribute to in-depth and meaningful conversations that go beyond surface-level discussions

- Expressiveness: A mix of talkativeness (versus uncommunicativeness), certainty (versus uncertainty), energy, and eloquence form the communicative style of an individual. Talkativeness reflects the willingness to engage in conversation, while certainty conveys confidence in one's statements. Energy contributes to the enthusiasm and dynamism of communication, and eloquence enhances the effectiveness of expression. The combination of these elements influences how individuals interact and convey their messages in various contexts

- Supportiveness: implies a communication style that is responsive and geared toward providing support. This factor suggests a communicative approach that involves reacting to others in a supportive and encouraging manner. The use of verbs in this context likely reflects actions that contribute to creating a supportive and helpful environment in communication.

- Emotional tension: it suggests a communication style that is characterized by emotional distress and negative emotions. This factor indicates that the communication involves expressions of sadness, irritability, anger, and tension, which may impact the overall emotional tone of the interaction. Understanding and managing emotional tension is crucial for effective communication and maintaining positive relationships

- Niceness: friendliness (versus unfriendliness), uncriticalness (versus argumentativeness), modesty, and cheerfulness contribute to a positive and approachable communication style. Friendliness fosters a welcoming atmosphere, while being uncritical promotes open and constructive dialogue. Modesty adds a humble and relatable dimension to communication, and cheerfulness contributes to a positive and upbeat tone. These components collectively shape an interpersonal communication style that encourages positive interactions and effective communication

- Threateningness: it suggests a communication style that is negative, potentially harmful, and lacks transparency. These components indicate the use of abusive language, threats, and deception in communication. Such a style may contribute to an unhealthy and non-productive communication environment, potentially leading to strained relationships and misunderstandings (De Vries et al., 2009).

Several empirical studies in literature reflect the impact of communication in organizational outcomes. The link between managers' communication competence and the success of organizational change is a critical aspect of change management. Effective communication by managers plays a pivotal role in navigating organizational change successfully as it is shown trough an empirical research trough 40 fast growing enterprises (Pundzienė et al., 2007). When managers possess change communication competence, they can articulate the reasons for change, address concerns, and create a shared understanding among employees. Specifically, during Covid 19, communication was a crucial element of crisis management (Dwiedienawati et al., 2021). Communication

is also a relevant tool to promote a new culture, when communication is open and reciprocal, and leaders use motivational language that resonates with employees' emotions, it fosters a positive emotional environment. This, in turn, strengthens employees' sense of connection and identification with the organization (Yue et al., 2021). Listening is a fundamental part of effective communication, it is a proactive and engaged process that demonstrates respect, understanding, and empathy. The practice of effective listening is portrayed as a catalyst for creating a positive organizational culture that, in turn, enhances various aspects of organizational performance and the well-being of its members. Development of high-quality connections within the organization characterized by understanding, empathy, and shared perspectives, contribute to a sense of togetherness among managers and employees (Kluger & Itzchakov, 2022).

2.5. Leadership development and main practices

Organizations face critical challenges to effectively improve leadership capabilities both at individual and collective levels. Leader and leadership development refers to strategies and practices oriented to reinforce individual and collective capacities to impact leadership effectiveness and business performance as a result, where time plays a relevant role (Day, David V. & Dragoni, 2015).

Day (2000) introduced the difference between leader and leadership development. While leader development refers to builiding individual intrapersonal skills and capabilities, the leadership development approach considered a social process to get the community engagement by reinforcing interpersonal competences (Day, 2000). This also arise the concept of human capital where the goal is individual development versus social capital where focus relies on building internal networks within the organization (Bouty, 2000).

Table 11: *Leader and leadership development* (Day, 2000)

Comparison Dimension	Development Target	
	Leader	Leadership
Capital Type	Human	Social
Leadership Model	Individual	Relational
	Personal power	Commitments
	Knowledge	Mutual respect
	Trustworthiness	Trust
Competence Base	Intrapersonal	Interpersonal
Skills	Self-awareness	Social awareness
	Emotional awareness	Empathy
	Self confidence	Service orientation
	Accurate self image	Political awareness
	Self-regulation	Social skills
	Self-control	Building bonds
	Trustworthiness	Team orientation
	Personal responsibility	Change catalyst
	Adaptability	Conflict management
	Self motivation	
	Initiative	
	Commitment	
	Optimisim	

Source: Google Scholar (Day, 2000)

In order to improve both individual and collective leadership capabilities, a wide variety of practices have been developed over time in organizations. One of theses practices is 360-degree feedback which has been traditionally used to improve performance leadership or management. Besides 360-degree feedback, other practices as mentoring, coaching or action learning have been used by organizations. However, effective leadership development relies more on a consistent and focus oriented stratety than on specific practices implemented (Day, 2000).

Table 12: *Practices in leadership development* (Day, 2000)

Practice	Description	Development Target	HC	SC	Strengths	Weaknesses
360-degree feedback	Multi-source ratings of performance, organized and presented to an individual	Self-knowledge Behavioral change	✓	x	Comprehensive picture; broad participation (A)	Overwhelming amount of data; no guidance on how to change; time and effort (C, S)
Coaching	Practical, goal-focused form of one-on-one learning	Self-knowledge Behavioral change Career development	✓	?	Personalized; intensive (C, S)	Perceived stigma (remedial); expensive
Mentoring	Advising/developmental relationship, usually with a more senior manager	Broader understanding. Advancement catalyst. Lessons learned/ avoid mistakes.	✓	?	Strong personal bond (S)	Peer jealousy; over dependence; (A, C)
Networks	Connecting to others in different functions and areas	Better problem-solving. Learning who to consult for project help. Socialization	?	✓	Builds organization (S)	Ad hoc; unstructured (A)
Job Assignments	Providing "stretch" assignments in terms of role, function, or geography	Skills development. Broader understanding of the business.	✓	?	Job relevant; accelerates learning (C)	Conflict between performance and devel.; no structure for learning (A, S)
Action Learning	Project-based learning directed at important business problems	Socialization Teamwork Implement strategy.	✓	✓	Tied to business imperatives; action-oriented (C, S)	Time intensive; leadership lessons not always clear; over-emphasis on results (A)

Note: HC = human capital; SC = social capital; ✓ = intended developmental target; x = not an intended developmental target; ? = possible developmental target; A = assessment; C = challenge; S = support.

Source: Google Scholar (Day, 2000)

2.5.1. 360-degree feedback

360-degree feedback is a process in which a leader receives anonymous feedback from subordinates, peers, managers, and, sometimes customers, that gives a more comprehensive view an individual's performance considering different perspectives in leaders' performance evaluation (Day, D. V., 2000). It was one the most relevant innovation in management during the 1990's (Atwater, Leanne & Waldman, 1998). This evaluation method has been widely adopted since then due to many reasons: it enables having a deeper understanding of self-awareness in organization behaviours, it has been tested to be an effective developmental practice and also it was adopted by relevant organizations that induced other companies to implement it (Day, 2000).

360-degree feedback validity as performance predictor was proved comparing to an independent and more objective assessment centre criterion. The 360-degree aggregated ratings without self-assessment significantly predicted the external assessment centre score. Using various evaluation perspectives gives more value to the ratings, for example, it was shown how subordinates scores were the most correlated to the assessment centre rating in some specific behaviours. Furthermore, it has been demonstrated that self-assessment tends to be inaccurate and lacks correlation with external scores. This lack of alignment may be attributed to various possible reasons such as social desirability or promotion expectations (Atkins & Wood, 2002a). The effect of self and other rating in prediction performance seems to differ depending on the regions. Empirical research in US and European countries found that simultaneously considering both self-ratings and ratings from others is generally found to be less beneficial in European countries compared to the United States (Atwater, Leanne et al., 2005).

While the accuracy of performance predictions using 360-degree ratings has been examined in research, it has also been demonstrated that these ratings are influenced by many factors, both from the individuals providing the ratings (raters) and from the individuals being evaluated (the rated individual). In the case of self-rating, the factors that affect the score are biographical characteristics, such us gender, age, education or position, personality and individual traits, and job relevant experiences. In the case of raters' ratings, the factors are related to the rater's cognitive processes, individual characteristics of the rater, rater motivation, contextual factors and rater-retee interaction (Fleenor et al., 2010).

In self-assessment men tend to rate themselves higher than women (Visser et al., 2008) (Vecchio & Anderson, 2009), older managers over rate themselves versus younger managers (Vecchio & Anderson, 2009) (Brutus, Stéphane et al., 1999) and higher managerial levels present also higher self-rating (Gentry et al., 2007). Regarding personality self-ratings of leadership tend to be positively associated with personality traits such as extraversion, openness to experience, agreeableness, conscientiousness, and dominance. In contrast, neuroticism shows a negative correlation with self-perceived

leadership. Narcissism and higher intellectual level impact in higher self-rating abilities (Judge et al., 2006) while empathy was the sole trait found to be linked to the alignment or congruence between self-ratings and ratings from others (Brutus, Stéphane et al., 1999). However, over time, as raters consistently receive feedback, their self-ratings tend to align more closely with the ratings provided by others (Bailey & Fletcher, 2002).

Regarding the rater's ratings it is relevant to consider the factors that affect this score. When assessing the employee's performance, the rater's judgment is not solely based on the actual performance but is also influenced by their beliefs about how a typical individual in that category performs. Rater intelligence, positive mood, and motivation impact in better ratings but they are also affected by political issues and rater personal goals that could impact negatively. The relation between rater and ratee has also an impact, the interpersonal affect that raters feel toward a person being assessed is positively associated with the overall favourableness of the performance ratings given to that individual, as well as knowledge of ratee's prior performance or rater's positive expectation of another person (Vance et al., 1983).

The use of 360-degree or multi-source feedback is associated with the development of human capital in organizations, but we need to consider that there are many factors that impact in this development and not always an improvement in performance or behaviours is achieved (Day, 2000). Many HR practitioners embrace 360-degree feedback as a relevant tool for leadership development, but just using it does not guarantee the positive impact, it is key to consider key success factor in order to amplify the impact in the human capital development (Atwater, Leanne E. et al., 2007). Organizational context and support to the 360-feedback process with an adequate implementation strategy and communication plan accompanied by follow up activities as a result of the feedback are very relevant to improve the impact of this practice (Brutus, Stephane & Derayeh, 2002). When results of 360-feedback are followed by coaching processes, the impact in leadership development is bigger because they are more likely to improve in self-awareness, employee satisfaction, commitment, and intention to quit (Luthans & Peterson, 2003). Impact is also much more relevant when there is a need in the

organization to change, and when leaders and managers are mindful of the challenges and actively working to adapt and navigate through the transformation process (Smither et al., 2005).

There are many data analytic techniques that have been employed in past studies of 360-degree that include difference scores, polynomial regression, multivariate regression, categories of agreement, WABA, and hierarchical linear modelling but as Fleenor (2010) suggested, more research is needed to develop tools and techniques that organizations could use to improve rating analysis (Fleenor et al., 2010). We miss the use of hierarchical clustering to analyse different leadership patterns that can be extracted by combining all 360 scores that cannot not be segmented with other techniques. Through this empirical research in which we apply hierarchical clustering to all 360 data, we can identify different leadership segments considering all the effects that impact in the different source of ratings.

2.6. Human resources and people analytics

In order to ensure leadership effectiveness, Human Resources management plays a critical role to achieve organizational performance (Combs et al., 2006). Specifically, the Strategic Human Resource management was defined by Wright and McMahan (1992) *'the determinants of decisions about HR practices, the composition of human capital resource pool, the specification of the required human resource behaviours, and the effectiveness of these decisions given various business strategies and/or competitive situations' (p. 298).* (Wright & McMahan, 1992). In strategic management, application of data and analytics is getting more relevance, given the growing attention to how data can enable better decision-making processes impacting performance (Ferraris et al., 2019), and this applies also to Human resources management, leveraging people data through analytical techniques informing organizational strategy and improving performance (McCartney & Fu, 2022).

One of the key elements to consider in HR Analytics is to really understand how employees contribute to performance. It is key ensuring the creation of indicators to measure this contribution and the cost and benefits of practices implementation, identifying the key talent clusters who really impact in the company through data-based empirical analysis (Angrave et al., 2016). To enable this HR Analytics approach, there are five moderating factors identified by Kremer (2018) which rely on ensuring the resources needed to implement an effective analytics approach to improve key indicators of the Human Resource management: a) Decisions to improve in the HR process; b) Data availability; c) Information technology; d) Analytics skills identification and e) Business approach (Kremer, 2018).

Cho (2023) in recent research described the necessary conditions for HR Analytics implementation in an organization (see table below) (Cho et al., 2023).

Table 13: *Conditions for the adoption of HE Analytics* (Cho et al., 2023)*.*

Table 2. Necessary Conditions for the Adoption of HR Analytics by Action Item.

	IT Infrastructure	Culture	Institution
Data Management	■ Build the integrated database ■ Connect the data system for interoperability ■ Establish the analytics tools for big data processing	■ Reach consensus on the necessity of data collection and integration ■ Cultivate positive attitude for data sharing	■ Formulate the guideline for data format standardization ■ Establish regulations for data quality management and data sharing
Staff Capabilities	■ Design the training program for improving the digital literacy ■ Position data experts in each division as well as the HR department	■ Give autonomy to data analysis staff ■ Tolerate trial and error/failure	■ Define the analysis competency ■ Implement the hiring process for the right talent ■ Offer reasonable compensation package for data experts
Acceptance	■ Disclose the analysis process and outcome in a transparent manner ■ Form task force as HR analytics agent	■ Reflect insights on decision-making ■ Leverage top management support ■ Cultivate collaboration between silos	■ Institutionalize data engagement ■ Share best practices ■ Give incentives for analytics adoption

Source: Google Scholar (Cho et al., 2023)*.*

Research on this topic has been increasing exponentially since 2017 and is defined as '*discipline that uses data and analytical tools to make informed decisions about*

employee management and organisational performance' (Bonilla-Chaves & Palos-Sánchez, 2023b). Bonilla-Chaves (2023) highlights in its bibliometric research the areas in which analytics may help human resource effectiveness: a) Employee selection and recruitment identifying the top performer candidates; b) Performance evaluation, helping to measure employee performance identifying key areas to improve; c) Talent retention, analysing risk of attrition in employees; d) Workforce planning and e) Training programme development planning according to specific skills required.

Some empirical cases in literature show the impact of using people analytics. Trough Google case study, it was analysed how to improve recruitment process leveraging on HR Analytics identifying key success factors of high performance in new candidates (Shrivastava et al., 2018). Unilever improves its application process using LinkedIn data and machine learning algorithms to predict behaviour and job-related aptitudes (Cho et al., 2023) and a software company uses HR Analytics to determine optimal number of interviewers and interviewees for a hiring panel (Nocker & Sena, 2019). But analytics may also assist to internal selection processes for leadership positions (Saputra et al., 2022). For example, Google's Project Oxygen identified the required behaviours for manager leadership trough the analysis of employee performance data and review (Gelbard et al., 2018) and Credit Suisse research showed how to reduce employees' attrition using people analytics (Sivathanu & Pillai, 2018). The Australian Public Service (APS) has shown how to use HR Analytics to predict workforce demand and supply building a long-term workforce planning strategy (Australian Public Service Commission, 2021). Arellano et. Al (2017) discovered through people analytics that career development and cultural norms were more relevant in performance than compensation. The analysis segmented employees into four clusters regarding behaviour and collaboration patterns. Application of the insights enabled increasing customer satisfaction and performance while reducing attrition (Arellano et al., 2017).

HR analytics may also be used to improve employee's performance trough analysis of skills and competencies identifying development target programs (Cho et al., 2023). A global aerospace company uses HR analytics to identify the best training programs

analysing the relation between those programs and the performance related to them (Klimoski et al., 2016) so they could significantly improve training effectiveness and efficiency. Amazon has implemented various HR analytics programs to improve performance. "Connections" is a daily feedback program regarding culture to identify areas to improve in a daily basis and "forte" is a data-driven employee review program to highlight employees' strengths in order to achieve a more positive review process and JP Morgan is currently using HR analytics to improve business performance and has been building a Workforce Analytics team during the last years (Cho et al., 2023). In the table below a summary described by Cho (2023) can be found:

Table 14: *Cases summary HR Analytics* (Cho et al., 2023).

Table 1. Case Synthesis: Applications of HR Analytics.

	Analysis Objective	Types of Data Used	Resulting Insights
Workforce Planning	■ Identify skill gaps ■ Verify whether the right people are placed in the right position ■ Retain top performers	■ Labor market data ■ Work portal documents ■ Individual profile data (employment information, personal detail, educational background, work history, performance reviews) ■ Employee behavior and collaboration data collected by sensors	■ Essential skills for performance ■ Long-term workforce supply and demand plan
HR Development	■ Identify training needs ■ Check the effectiveness of current training programs	■ Training content ■ Individual training history ■ Performance appraisal data	■ Automated and individualized training recommendation ■ Correlation between training and performance
Recruitment and Selection	■ Recruit talented applicants in efficient and timely manner ■ Nudge desired manager behaviors ■ Expanding the candidate pool	■ CV data ■ Social media data ■ AI-assisted interview data ■ Job market data ■ Past candidates' recruitment information ■ E-mail records	■ Person-job fit of the applicant ■ Performance prediction ■ Hiring process improvement ■ Desired manager competencies and traits
Performance Improvement	■ Analyze HR factors influencing organizational outcomes ■ Detect employee sentiment related to performance	■ Administrative data ■ Turnover data ■ Employee surveys ■ Performance appraisal data ■ Financial statistics ■ Pop-up questions data ■ External/internal social media data ■ Anonymous bulletin board	■ Performance-inducing HR factors ■ Negative elements affecting employee satisfaction

Source: Google Scholar (Cho et al., 2023).

So, using big data capabilities in Human Resource management may dramatically improve decision making processes regarding evaluation and deployment of personnel strategies and collaboration with main stakeholders in the organization (Hamilton & Sodeman, 2020). However, Human Resources analytics is as an emerging field of study and there is need for research to uncover the impact of digitalization and increased people data on HR decision-making and, subsequently, organizational outcomes (McCartney & Fu, 2022). More research needs to be done that can have practical implications for HR professionals, organizations, and policymakers, since findings can inform best practices, strategies, and decision-making in the application of HR analytics (Bonilla-Chaves & Palos-Sánchez, 2023b).

Through this research we sum a valuable contribution to the field of Human Resource analytics related to leadership and impact in performance. By applying machine learning techniques to existing data, our aim is to uncover insights into leadership development, identifying distinct leadership clusters, and understanding their relationships with performance to support Human Resource department to identify more relevant actions to implement and improve leaders' performance.

2.7. Literature review main conclusions

In the above literature review, we have analysed the four areas of research in the field of effective leadership development that we introduced in the first chapter which are leadership theories, competencies models, processes and practices in leader and leadership development and human resource analytics. We have delved into the most relevant aspects in these different areas of study and identified some research gaps to which we would like to provide answers in the course of this research:

- There is little empirical evidence of leadership effectiveness in real business cases, and therefore, we identified that there is a gap between the academic literature and its practical application in real business cases.

- We are missing an analysis model of leadership effectiveness that contemplates the different areas of research, that is, leadership theories, competencies, leadership development processes and application of Human resource analytics.

- There are no references in using 360-feedback data through hierarchical clustering to identify different leadership styles.

- Need for research that link process leadership data and performance outcomes as measure of leadership effectiveness with real business case data.

- A gap is also identified in leadership effectiveness measuring methodology in the Human Resource management field.

Chapter 3

Methodology and data gathering

3.1. Data gathering

As we described in the introduction, this research is based on the data related to main leaders of a multinational company across the ten different geographies where the company is present. The data for this study was collected through the Human Resources (HR) Systems of the company and pertains to 1,222 executive top leaders within the organization in 2022. The target group under consideration consists of individuals with an average age of 49 years and an average tenure of 16 years within the organization. Within this group, 27% are female, and there is a distribution of 42% occupying positions within the business domain, while 58% are situated in support areas. These top leaders

hold critical roles in managing the company, and the successful execution of strategic plans relies on their leadership. It's worthy of note that this group of top executives oversees a substantial workforce, encompassing more than 100,000 employees. This comprehensive dataset includes information about the executive leadership tier, providing a robust foundation for analysing leadership behaviours, performance evaluations, and other relevant variables. Given the strategic significance of these top leaders, the findings derived from this dataset are likely to carry significant implications for organizational effectiveness and success. The use of HR Systems ensures the reliability and accuracy of the collected data, and the substantial sample size enhances the implementation of the study's outcomes. The study, therefore, aims to offer valuable insights into leadership dynamics at the executive level and their impact on organizational outcomes within the broader context of a sizable workforce.

The data collected from these executive top leaders come from three primary sources, encompassing comprehensive insights from multiple perspectives. These sources relate to 360-degree feedback, the annual performance review ratings, and general socio-demographic data. Information obtained from the 360-degree feedback mechanism provides a holistic view of the leaders' behaviours performance, incorporating evaluations from various stakeholders such peers, subordinates, managers, and self-valuation. This multi-source feedback offers a well-rounded assessment of leadership the 360-degree feedback process encompass a spectrum of key leadership behaviours that are analysed: embracing change, collaboration, communication, customer focus and determination. Remarkable is the independence of this evaluation process from the annual performance review, as well as its execution at different periods of time during the year. As 360-degree feedback instruments continue to be widely used as a measure of leadership in organizations (Fleenor et al., 2010), we analyse how this measurement influences outcome and performance. Previous research has demonstrated substantial correlations observed between 360-degree survey assessments and evaluators' appraisals of leaders' personality traits (Fletcher, 2015). Moreover, notable correlations have been established between 360-degree survey ratings and both the levels of

engagement within work units and managerial assessments of work unit performance (Langford et al., 2017). 360 feedback is also a key element to support high potential leadership development (Bialek & Hagen, 2022), and it has been widely researched in the leadership literature.

Besides 360-degree feedback data, annual performance review data was collected. This category encompasses data pertaining to the leaders' performance vis-à-vis the attainment of annual objectives. These appraisals are conducted at the conclusion of the year, forming an integral component of the evaluation process, and subsequently influencing bonus adjustments. This source of data captures the formal evaluations and assessments conducted by the organization. These ratings likely cover key performance indicators, goal attainment, and overall leadership effectiveness, providing a structured evaluation of the leaders' contributions and impact.

In addition to the behaviours evaluated in the 360-degree feedback and the annual performance review, the study incorporates a range of additional data points related to managers. These supplementary data elements provide a more comprehensive understanding of the managerial context such as age, gender, tenure in the company, business or support function and team composition related to age, tenure, and management level are considered. By incorporating this additional data, the study aims to explore correlations between managerial characteristics, team composition, and leadership behaviours. The multi-dimensional approach enhances the depth of analysis, allowing for a more nuanced understanding of the factors influencing leadership within the organization.

3.2. Methodology description

Following the data gathering, the empirical investigation advances through a two-stage application of analytics techniques. Firstly, an emphasis is placed on hierarchical clustering analysis, a machine learning algorithm, with the aim of discerning patterns in

leaders' managerial competencies and behaviours. Clustering is a process of categorizing set of objects into groups called clusters (Patel et al., 2015). Hierarchical cluster analysis is favoured over conventional factor analytic methods when researchers aim to mitigate the loss of information inherent in a set of observations characterized by complex variables that load onto multiple factors. This renders the technique particularly suitable for investigating the potential convergence of behaviours linked to various manifestations of leadership dispersion. Although cluster analysis is fundamentally a quantitative approach, it encompasses a qualitative facet associated with the interpretation of emergent clusters, rendering it an exemplary hybrid methodology for reconciling the schism between theory and practice that has posed a challenge for scholars investigating distributed leadership employing more conventional research methodologies (Latta, 2019).

This clustering analysis seeks to discover distinct archetypes of leadership prevalent within the organization, drawing upon the 360-degree evaluation data related to the five specific behavioural dimensions evaluated trough the 360-dregree feedback, namely embracing change, collaboration, communication, customer focus, and determination given by the manager, collaborators which include subordinates and peers, and self-valuation. Indeed, the hierarchical clustering process incorporates a set of 15 variables as part of the analytical framework. The inclusion of these 15 variables enables a comprehensive examination of multiple dimensions that contribute to the formation of distinct leader clusters based on shared characteristics or patterns in the data.

Some recent references using hierarchical clustering have been found in literature as an alternative to conventional factor analysis to identify leadership behaviours in different forms of distributed leadership (Latta, 2019). Other research shows clustering technique for analysing Leadership style of the Head of the Institutions in Education sector (Sen et al., 2023). Indeed, cluster analysis proves to be a valuable tool in aiding leadership educators in the categorization of students. Through this method, program designers are presented with an opportunity to formulate interventions that are customized to

address the unique requirements of individual students more effectively (Facca & Allen, 2011).

This hierarchical clustering method is characterized by a sequential process involving the following stages: initialization, wherein individual data points are treated as distinct clusters; computation of similarities/dissimilarities through the calculation of distances between cluster pairs based on a chosen metric; merger of the closest clusters determined by the specified distance metric; subsequent updating of the distance matrix; iterative repetition of merging and updating steps until a predefined termination criterion is met; and, ultimately, the construction of a dendrogram to visually encapsulate the clustering procedure (Murtagh & Contreras, 2012).

The clustering analysis has been conducted using the Nbclust library in the R programming environment (Charrad et al., 2014). Prior to analysis, the variables underwent standardization through the implementation of the scale function. The selection of Euclidean distance was motivated by the nature of the dataset, characterized by continuous numerical variables. Furthermore, the Ward linkage method was employed in the clustering process since it merges typically a good performance.

As a second stage of the empirical study, a regression analysis has been conducted to find out the relation between these identified clusters and performance outcomes pertaining to quantifiable objectives derived from annual performance review. To this end, a regression analysis has been deployed, involving the integration of cluster data with other pertinent personal and professional attributes specific to each leader. Indeed, regression analysis is a prevalent analytical tool employed in the extant literature to scrutinize the influence of specific behaviours or styles of leadership on performance outcomes (Raja & Palanichamy, 2011), (Long et al., 2016), (Ichsan et al., 2021).

Regression analysis is often utilized to examine the associations between leadership attributes or behaviours and outcomes such as job satisfaction, performance, and organizational commitment. By employing regression models, we can identify the

strength and direction of these relationships, assess the significance of different predictors, and understand the nuanced impact of various factors on the outcomes of interest. This analytical approach provides valuable insights into the dynamics of leadership and its implications for organizational and individual outcomes.

Gumuluoglu (2009) found trough a regression analysis, a positive association between transformational leadership and organizational innovation (Gumusluoglu & Ilsev, 2009). The way leaders conduct themselves and exhibit specific behaviours was demonstrated, with a regression analysis, to have a notable impact on the organization, specifically the level of commitment demonstrated by individuals within the organization (Huey Yiing & Zaman Bin Ahmad, 2009). Study in a non-profit organization showed trough regression that transformational leadership was also a key factor in the group performance (McMurray et al., 2012). On the contrary, when leadership is ineffective characterized by lack of strategic vision and negative behaviours has a negative impact on individual and organizational performance (Aboyassin & Abood, 2013). Regression analysis was also used to analyse the significant effect of leadership style on subordinates and performance in a financial institution where positive and negative correlation were found. Leadership style dimensions jointly predict organizational performance for 23% variance of outcome, where that transformational and democratic styles were the most positive (Ojokuku et al., 2012a).

Servant leadership impact was analysed by regression model trough which it was found that humility appears to amplify the effectiveness of their action-oriented leadership when leaders are in top hierarchical positions (Sousa & Van Dierendonck, 2017). Recent research has also found how servant leadership can improve performance in perceived organizational politics (Khattak et al., 2023). However, when leaders have individual characteristics associated with the Dark Triad of personality (Machiavellianism, narcissism, and psychopathy), it has been demonstrated that, jointly with psychological capital (a positive psychological state), play roles in predicting the lower level of satisfaction of fundamental needs in the employees (Elbers et al., 2023).

As a summary of the methodology approach, we include Figure 15 in which the process is described. The first stage of the analysis refers to hierarchical clustering only with 360 data, and the second stage that refers to the Regression using the clusters, and additional data.

Figure 14: *methodology approach*
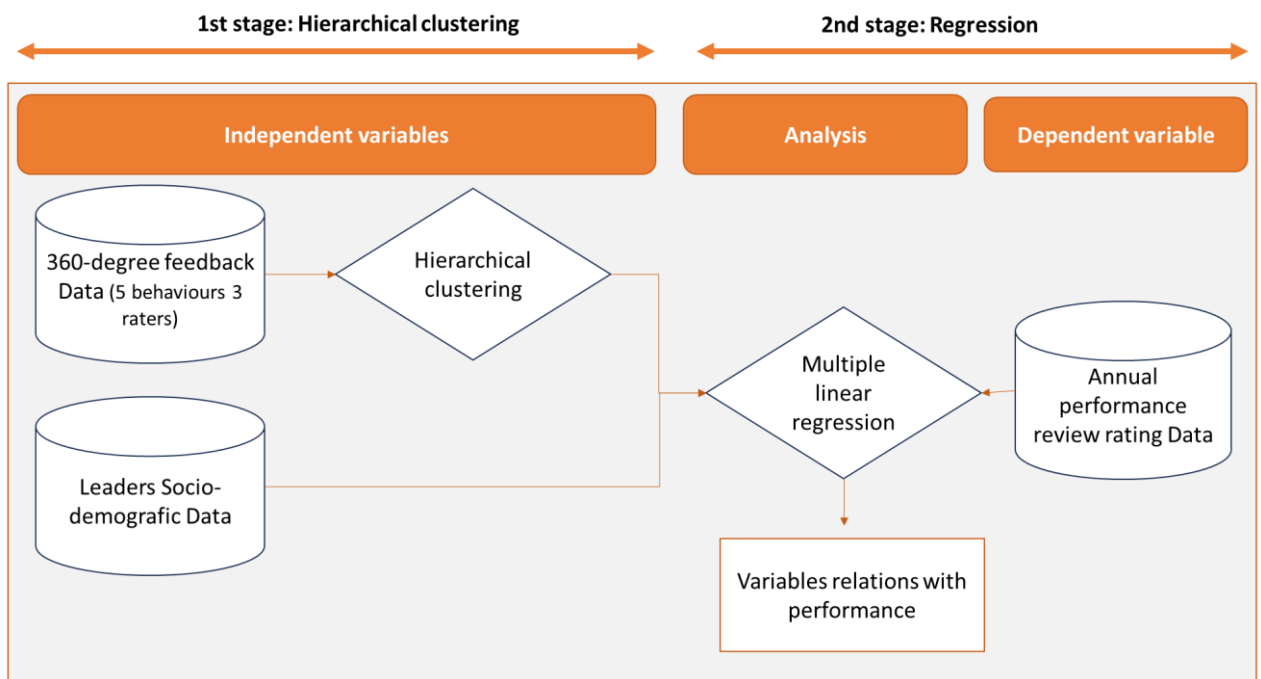
Source: Own elaboration

Chapter 4

Results and interpretation

4.1. Clustering analysis results

As mentioned before, clustering analysis has been conducted utilizing 360-degree feedback data, encompassing 15 variables pertaining to the assessment of five distinct behaviours. These behaviours were evaluated through a combination of self-assessment, managerial evaluations, and assessments from collaborators which include subordinates and peers. Clusters were formed exclusively based on the assessment of 15 variables pertaining to behaviours in a 360-degree evaluation. The clustering process uses these variables to group or categorize entities, such as individuals, according to similarities or patterns observed in the evaluated behaviours. These variables represent the valuation

from 1 to 4 being 4 the best and 1 the worst valuation given by all the participants in the 360 feedback.

As a result of applying hierarchical algorithm trough R, first step is creating the heatmap, which is a graphical representation of the dataset where values are differentiated using colours, arranged in a matrix format and it provides a comprehensive visual overview of the structure and relationships within the dataset which facilitates pattern recognition.

Figure 15: *Heatmap*

Source
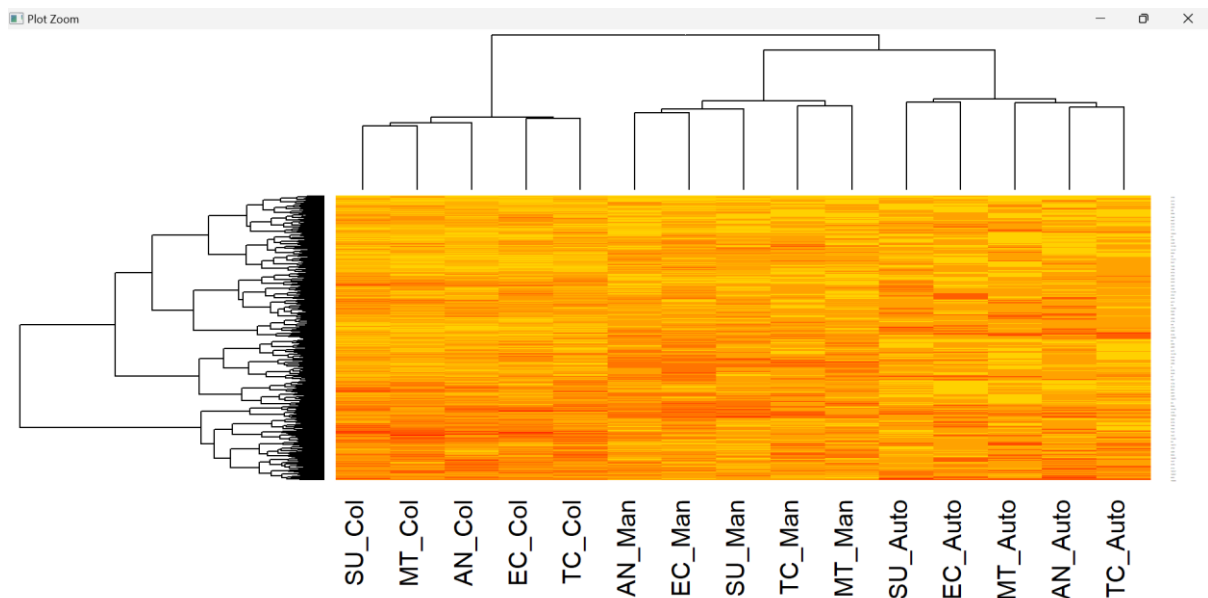
Source: Own elaboration in "R" program

In the above heatmap, it can be observed that in the evaluation of the different behaviours, the rater making the evaluation weighs more heavily than the behaviour itself. That is to say, the graph shows that the evaluation of different skills is very homogeneous for each evaluator, and therefore, evaluators tend to evaluate a person as a whole rather than discriminate much between the behaviours of the same person.

The NbClust function performs an exhaustive analysis by applying various clustering indices and methods to ascertain the optimal number of clusters in a dataset. The indices employed include the Silhouette index, the Dunn index, and the Gap statistic, among others. The function offers a comprehensive evaluation and suggests the number of clusters that receives the highest consensus of being "optimal" across these indices. In the specific analysis conducted, the result indicates that 6 clusters were identified as optimal based on the majority rule.

Following the determination of the optimal number of clusters, a cluster dendrogram was generated to visually illustrate the hierarchical clustering process. This graphical representation provides insight into how individual data points or clusters are successively amalgamated throughout the course of the clustering algorithm. In the resulting plot (Figure 17), vertical lines correspond to individual data points, while horizontal lines depict the merging of clusters. The vertical position at which two clusters join indicates the degree of dissimilarity at which the merging occurred, offering a hierarchical perspective on the clustering relationships within the dataset.

Figure 16: *Dendrogram*
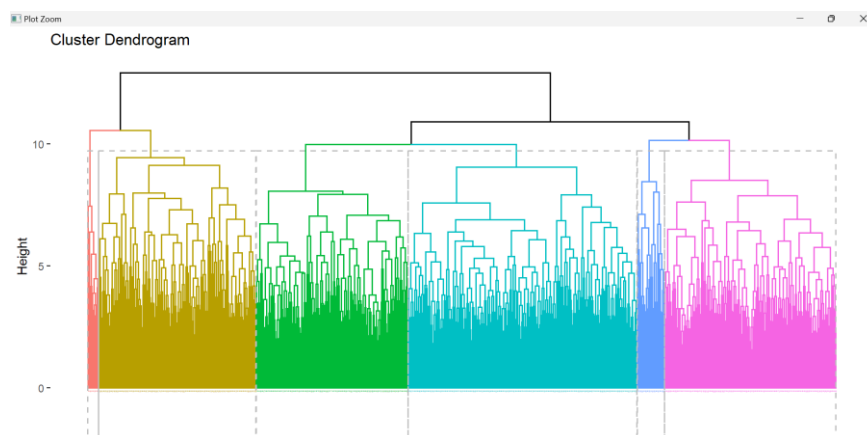
Source: Own elaboration in "R" program. Dark blue Impostor, Light blue Transformational, dark pink Collaborative, Dark yellow comfort zone, and light pink Narcissist

In the aftermath of the cluster analysis applied to the 360-degree valuation variables, all leaders have been categorized into six distinct clusters. Notably, Cluster 4 emerges as the most substantial, encompassing 31% of the total population, followed by Cluster 3, which accounts for 23%. Subsequently, Cluster 2 comprises 21% of the leaders, while Cluster 1 represents 20%. Collectively, these four clusters constitute 95% of the entire leader population. Additionally, there are two smaller clusters: Cluster 5, comprising 4%, and Cluster 6, consisting of 1%.

Upon conducting a descriptive analysis of the cluster characteristics with respect to the remaining variables, notable differences have been observed, as depicted in Table 13. The disparities in the cluster descriptions across these variables provide additional insights into the distinct profiles or traits associated with each cluster. The largest cluster with 31% of the total number of leaders corresponds to cluster 4, which is characterized by being a younger cluster, with more weight of women and a better performance, being the cluster with the highest % of exceptional performance. The next cluster weighing 23% is Cluster 3, with the second highest weight of exceptional performance. This is followed by Clusters 1 and 2 with 20% and 21% respectively. These two clusters are of a higher average age, lower performance, the first with more weight of business areas and less female presence than the average, and the second with a significantly lower weight in business. This comprehensive examination aids in understanding the nuanced distinctions among the identified clusters, beyond the initial classification based on the 360-degree valuation variables.

Table 15: *Cluster description*

Clusters	Change aversion	Comfort zone	Collaborative	Transformational	Impostor	Narcissist	Average
% population	20%	21%	23%	31%	4%	1%	
Average Age	50,3	50,0	48,7	48,4	48,0	49,3	49,2
Average Seniority	16,2	16,0	16,6	16,6	13,8	18,6	16,3
% Female	22%	28%	23%	32%	31%	28%	27%
% Business Area	53%	36%	42%	43%	31%	17%	42%
Performance average	2,8	2,8	3,0	3,1	2,8	3,0	3,0
% Excepcional	6%	7%	13%	19%	11%	6%	12%

Source: Own elaboration

In the examination of cluster differences, to check if these differences are statistically significant, an initial attempt was made using ANOVA, a parametric test assessing mean differences among multiple groups. However, the assumption of normality was not met, as indicated by the Shapiro-Wilk test results. Subsequently, homoscedasticity, evaluated through Bartlett's test due to the continuous nature of dependent variables, revealed significant differences in variances among the groups *(p < 2.2e-16).*

Given the violation of parametric assumptions, the Kruskal-Wallis test, (see Table 14) a nonparametric alternative suitable for non-normally distributed data, was applied. The results of the Kruskal-Wallis test indicated that at least there is a cluster in which there are significant differences in the variables of age of the leaders, annual objectives valuation performance, and area of work related to business or support function area. The hierarchical clustering performed by the 360° feedback behavioural assessment allows identifying different segments of leaders that reflect significant differences in age, type of activity (business area or support) and evaluation of performance on objectives. As a result of the significant differences in performance, we can already anticipate that the valuation of behaviours determines a different impact on results. Specifically, Clusters 4 and 3 are those where the performance is better, and with a higher weight of exceptional performance while Clusters 1, 2 and 5 are those with the worst performance.

Table 16: *Kruskal Wallis Test*

Variable	Chi-squared	P-value
Age	*19.555*	*0.001514*
Gender	*9.1974*	*0.1014*
Goals performance	*49.739*	*1.567e-09*
Business Area	*22.407*	*0.0004381*
Seniority	*3.061*	*0.6906*

Source: Own elaboration

To gain a deeper understanding of these differences, a detailed breakdown of cluster distribution has been presented concerning Age, Performance, and Area of work, as illustrated in Table 15 and Figure 18. This visual representation allows for a closer examination of how these key variables are distributed across the identified clusters. The insights derived from this figure contribute to a more comprehensive characterization of the distinct profiles and attributes associated with each cluster, shedding light on the specific demographic and professional features that contribute to the observed differences among clusters. Based on the observations from the provided figure, it becomes apparent that Cluster 4 exhibits a larger representation among individuals with relatively younger ages, while Cluster 1 becomes more prominent as age increases. These findings underscore the importance of age as a differentiating factor among the identified clusters, contributing to the overall understanding of the demographic distinctions characterizing each cluster.

A significant difference is evident in cluster distribution based on the distinction between being a leader in a Business Area versus a leader in Support Areas. Notably, Cluster 1 exhibits a considerably higher prevalence among leaders in Business Areas, while Cluster 2 assumes a more pronounced presence among leaders in Support Areas. This distinct association underscores the relevance of the organizational context or functional role in influencing the composition of the identified clusters. The observed differences

emphasize the need for a nuanced understanding of the interplay between leadership profiles and the specific business or support functions within the organization.

It is significant to emphasize a relevant difference in performance evaluations across distinct clusters. Clusters performance average indicate that various types of leaders, as characterized by their behaviour evaluations, manifest divergent performance levels. Specifically, Cluster 4 stands out with the most positive performance valuation, averaging 3.08. Subsequently, Cluster 3 follows closely with an average valuation of 3.01, and Cluster 6 is notable for a performance score of 2.99. Conversely, clusters with comparatively lower performance appraisals include Cluster 5 with a valuation of 2.82, Cluster 2 with 2.83, and Cluster 1 with 2.85. These findings suggest a correlation between the behavioural profiles of leaders within each cluster and their respective performance outcomes, providing valuable insights into the potential impact of leadership behaviours on overall effectiveness.

In relation to gender, although there is no significant difference between the clusters in the weight of female leadership, it should be noted that the cluster with the best performance is the one with a higher-than-average weight of women, with 32% versus 28% on average.

Table 17: *Cluster distribution according to variables Age and function Area*

Age	Change aversion	Comfort zone	Collaborative	Transformational	Impostor	Narcissist	Average
<40	4%	4%	7%	6%	9%	11%	5%
40-45	21%	18%	25%	27%	27%	11%	23%
46-50	23%	30%	30%	30%	29%	28%	29%
50-55	32%	32%	24%	25%	27%	44%	28%
>55	20%	16%	15%	11%	9%	6%	14%
	100%	*100%*	*100%*	*100%*	*100%*	*100%*	100%

Function	Change aversion	Comfort zone	Collaborative	Transformational	Impostor	Narcissist	Average
Business	54%	36%	42%	43%	31%	17%	42%
Support	46%	64%	58%	57%	69%	83%	58%
	100%	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*

Source: Own elaboration

Figure 17: *Average performance rating per cluster*
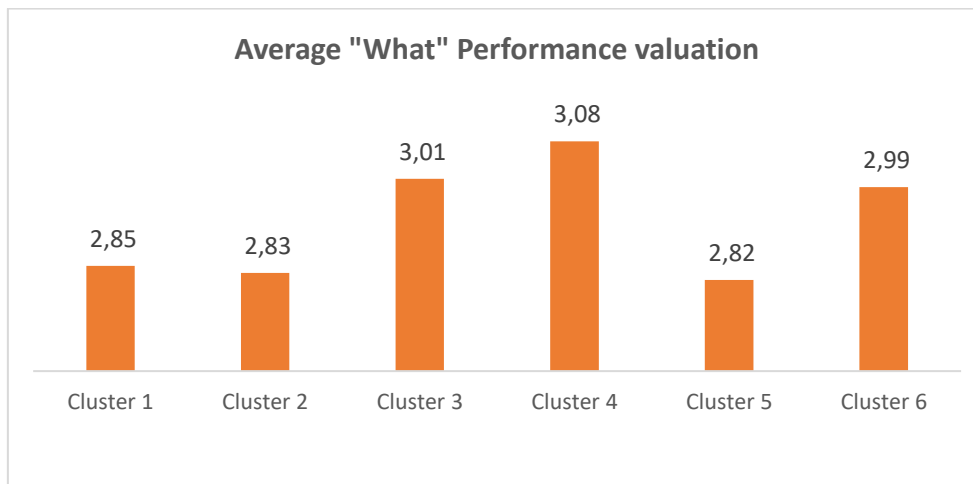
Source: Own elaboration

As a summary we can highlight:

- Through the heatmap it is observed that there is a tendency for raters to assess the whole person in all its dimensions, rather than assessing each behaviour. This may be due to the bias of the evaluators, process through which raters tend to place ratees into preexisting categories (Fleenor et al., 2010).

- Hierarchical clustering makes it possible to identify 6 different types of leaders, 4 of them with relevant weights between 20-30% and 2, with less presence, between 1-4%.

- At least there is a cluster that present significative differences in age, type of activity, business or support, and evaluation of target performance. Therefore, we can affirm that behavioural 360 feedback clustering has an impact on performance.

- Cluster 4 and 3 are those which present better results on performance, versus 1,2 and 5 which have less performance valuation.

4.2. Cluster description and interpretation

Certainly, proceeding with cluster description and interpretation is a crucial step to derive meaningful insights from the identified clusters. This involves a comprehensive examination of the characteristics inherent to each cluster, understanding the unique attributes that distinguish them. This process also entails identifying key behaviours that exert a significant influence within each cluster. Additionally, relating these findings to existing literature research is imperative for contextualizing and validating the observed patterns. By aligning the cluster characteristics and influential behaviours with relevant literature, one can draw upon existing knowledge to better understand the implications and potential managerial or organizational significance of the identified clusters.

The interpretation of clusters not only sheds light on the current state of leadership within the organization but also provides a foundation for informed decision-making and targeted interventions aimed at improving leadership effectiveness or addressing specific challenges associated with each cluster. It may contribute to a deeper understanding of the interplay between behaviours and performance outcomes context, offering valuable insights for strategic planning and leadership development initiatives.

Following the cluster analysis, the subsequent step involves a detailed description of each cluster, drawing connections with existing literature. It's notable that the analysis has identified four major clusters, representing a substantial 95% of the population, alongside two minor clusters accounting for 5%. The characterization of each cluster is

informed by a qualitative analysis, incorporating key features and characteristics derived from the data.

As a consequence of the analysis, two primary clusters showcasing the highest performance ratings have been distinguished. Cluster 4, denoted as "Transformative," constitutes the largest cluster, encompassing 31% of the population, while Cluster 3, labelled as "Collaborator," accounts for 23%. Conversely, the two major clusters associated with lower performance ratings are Cluster 1, characterized as "Change aversion," representing 20%, and Cluster 2, described as "Comfort Zone," constituting 21% of the total population. Additionally, two minor clusters have been identified: Cluster 5, designated as "Impostor," and Cluster 6, named "Narcissist," though these clusters collectively represent only 5% of the total population. The subsequent sections will provide a comprehensive and contextualized description of each identified cluster.

4.2.1. Cluster 1: Change aversion

This cluster, constituting 20% of the leader population, is characterized by distinctive features. The average age within this cluster is 50, slightly higher than the overall average. The representation of female leaders in Cluster 1 stands at 22% below group's average, and notably, 53% of leaders within this cluster are affiliated with the business area, a percentage significantly higher than the group's average. Moreover, leaders in Cluster 1 boast an average of 16 years of experience which is aligned with average. In terms of performance, Cluster 1 exhibits an average performance rating of 2.85, which is below the overall average for the group -4%. This suggests that, on average, leaders within this cluster are evaluated with lower performance scores compared to the entire leader population.

In summary, Cluster 1 is characterized by a relatively mature age profile much more present in older leaders, a less proportion of female leaders, a predominant presence

from the business area, substantial leadership experience, and an average performance rating below the group's average.

In the assessment of behaviours within Cluster 1, several notable features emerge, shedding light on the distinct characteristics of this cluster. The highest valuation is attributed to the valuation by collaborators, indicating that, on average, colleagues perceive leaders in Cluster 1 much more positively in terms of their behaviours than the manager. Manager's valuation is sensibly low, indicating a divergence between peers' perception and how their behaviours are perceived by their immediate supervisors. It may be caused by lower objectives performance as we can see in Table 13. According to previous research on 360-degree feedback supervisor rating alone tend to be a predictor of performance (Atkins & Wood, 2002b).

Comparing to average population, leaders within Cluster 1 self-rate their behaviours higher than the group average, particularly in behaviours such as "Think Customer" and "Move Together." This suggests a self-perceived strength in customer-centric thinking and collaborative teamwork. However, due to a range of individual and contextual factors, self-ratings do not consistently align with objective reality, or the evaluations provided by others (Fleenor et al., 2010). As it has been analysed in literature, males and older individuals tend to overestimate their leadership abilities and effectiveness compared to assessments made by others. This tendency toward overrating oneself contributes to larger disparities between self-evaluations and evaluations provided by others (Fleenor et al., 2010). Moreover, previous 360 research validation against an assessment centre showed that there is no linear relationship between self-rating and performance, and what is more relevant, those who tend to rate themselves higher had negative relation with performance (Atkins & Wood, 2002b).

Regarding manager's valuation, it is not only is lower than collaborators, but also is much lower than group average manager's valuation. This effect may be due to lower performance as we suggested above but could be also related to other effects. Recent research has highlighted the team leader survival syndrome, that manifests through

adversarial responses toward both new and experienced professional subordinates when team leaders perceive professional subordinates as potential threats that could compromise their positions and the likelihood of retaining employment. This syndrome is characterized by a heightened sense of self-preservation and a perception of subordinates as risks to the team leader's professional standing and job security (Evans, M. & Farrell, 2023).

Specifically, behaviours related to "Embrace Change" and "Act Now" receive lower valuations, indicating that leaders in this cluster may exhibit relatively lower scores in these areas compared to the overall group average. It may suggest the possibility of a change aversion effect among leaders in this cluster.

The study of organizational change has been a longstanding subject of research, with numerous works exploring the challenges associated with the adoption of change initiatives. Change aversion or resistance to change, can impede the success of organizational change effort, and it may arise from to fear of the unknown or discomfort from potential loss of control. Challenges associated with resistance persist, particularly in the absence of effective change leadership. Leadership plays a crucial role in proactively addressing resistance, thereby ensuring a positive and productive outcome for organizational change initiatives (Hubbart, 2023a). Since anticipated change has the potential to disrupt the interests and values of well-established groups within an organization, it may arise a crisis situation and it can, in turn, serve as a catalyst for the emergence of charismatic leadership in opposition to the impending change. The fundamental notion is that when established groups perceive a threat to their interests or values, charismatic leaders may arise as a response to mobilize and lead opposition to the proposed changes (Levay, 2010). Those individuals who believe that the current situation has been beneficial and fulfils their present requirements are less likely to welcome or endorse suggested alterations to the existing state. In contrast, individuals who feel that the current state is not advantageous or does not align with their present needs and interests are more likely to welcome and endorse proposed alterations to the existing state. This demonstrates a willingness to take risks in pursuit of potential gains

(Evans, G. E. & Evans, 2019). It may refer to Prospect Theory which delineates a behavioural tendency where individuals exhibit risk aversion when faced with the possibility of losing something they already possess. The greater the perceived value or utility of the possession, the more inclined they are to be risk-averse when confronted with the potential of losing it (Kahneman et al., 1991). Successfully addressing and mitigating this resistance to change is a key element of effective change leadership (Bass & Bass Bernard, 1985a).

In summary, regarding Cluster 1:

- Sums 20% of total leader's population with a relatively mature age profile, a less proportion of female leaders, a predominant presence from the business area, substantial leadership experience, and an average performance rating below the group's average

- Self-valuation much higher than manager valuation and higher than group average. Previous research demonstrated that those who show higher self-valuation may have negative effects on performance (Atkins & Wood, 2002b), and that male and older managers tend to rate themselves (Fleenor et al., 2010). It is notable the higher collaborator's valuation above self-valuation and higher than group average.

- Very low manager valuation and much lower than group average that could be related to lower performance. Supervisor ratings tend to be predictor of performance (Atkins & Wood, 2002b), although sometimes may appear the survival syndrome effect (Evans, M. & Farrell, 2023).

- Embrace change is the behaviour with the lowest rating by the manager. This may be related to resistance to change in more established groups as Cluster 1 which present older age and tenure, who may perceive in change a threat to their interests or values. Prospect Theory delineates a behavioural tendency where individuals exhibit risk aversion when faced with the possibility of losing something they already possess. The greater the perceived value or utility of the

possession, the more inclined they are to be risk-averse when confronted with the potential of losing it (Kahneman et al., 1991).

Figure 18: *Cluster 1 behaviours 360 valuation*
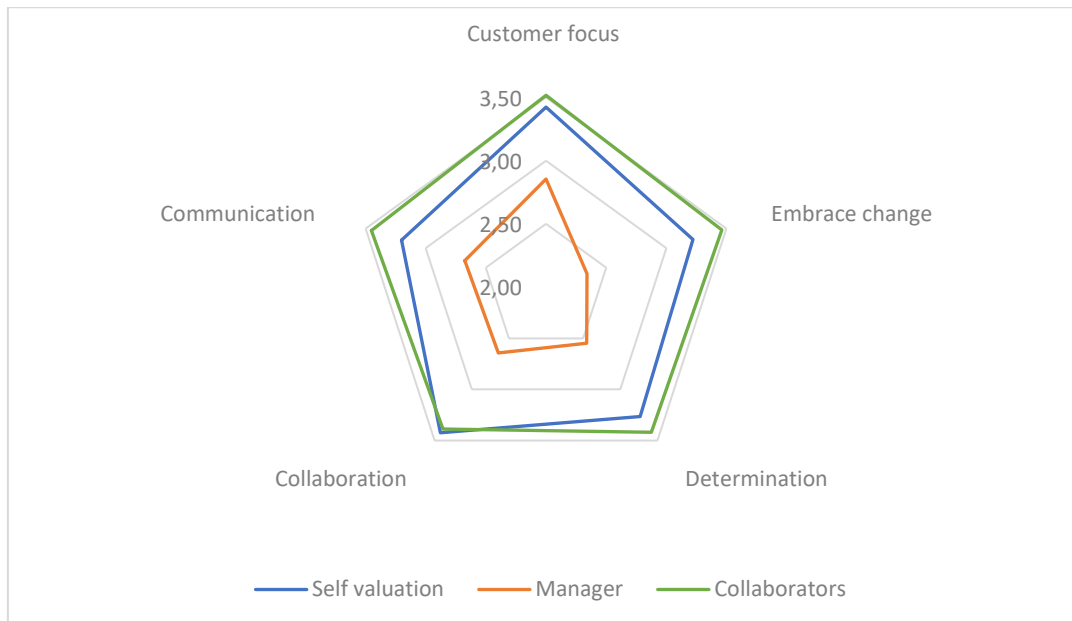
Source: Own elaboration

Table 18: *Cluster 1 behaviours valuation compared to group average.*

% represent the relation between each valuation and the corresponding valuation for the whole population (including all clusters)

	Self valuation	Manager	Collaborators
Customer focus	8%	-8%	3%
Embrace Change	3%	-20%	2%
Determination	5%	-16%	2%
Collaboration	8%	-14%	3%
Communication	4%	-12%	3%

Source: Own elaboration

4.2.2. Cluster 2: Comfort zone

Cluster 2 constitutes 21% of the overall leaders' population, featuring an average age of 50 years, slightly surpassing the group average. Within this cluster, 28% of leaders are female, and there is a notable prevalence of leaders from support areas, possessing an average tenure of 15,9 years little below average. However, the performance rating for this cluster is 2.83, which is below the group average by 4%.

In summary, Cluster 2 is characterized by a relatively mature age profile much more present in older leaders, equal proportion of female leaders as average, a predominant presence from support area, similar tenure experience than Cluster 1, and an average performance rating below the group's average.

In terms of **behaviours** valuation within Cluster 2, both collaborator and self-valuation exhibit closely aligned values, surpassing manager valuation. However, all ratings fall below the group average, with collaborator valuation notably lower than group average across all behaviours. This discrepancy in behaviours valuation within Cluster 2, particularly the lower ratings from collaborators and the overall below-average ratings, likely may contribute to a lower objective performance within this cluster.

This type of leader may arise the concept of managerial mediocrity, which is a state of being moderately capable or proficient, an aspect that has received limited attention in research, despite its substantial impact on organizational performance. It is crucial for organizations success being able to recognize and manage leadership mediocrity, due to management system usually don not affect to mediocre individuals (Sengupta, 2022).

The presence of these leaders within the organization can have a detrimental impact as their mediocrity may become normalized over time, potentially influencing the organizational culture, values, and standards. The adage "what you permit, you promote" underscores how tolerating or accepting mediocre performance can inadvertently contribute to its perpetuation and acceptance as the norm within the organizational context (Kerfoot, 2009).

Mediocrity within the leadership ranks may stem from a deficiency in fostering a sense of belonging and a motivational context. Leaders should prioritize understanding and addressing the emotional needs of team members to cultivate a connection that inspires proactive engagement and action. This emphasis on emotional connection can be instrumental in elevating performance and combating mediocrity within the organizational setting (Carter, A. D., 2023).

The poor performance along with the profile of the individuals in the cluster can also be related to the concept of the "comfort zone", as we described previously in this research. This is a state in where individuals operate in an anxiety-neutral condition, using familiar behaviours to deliver a steady level of performance without a sense of risk. This state may have negatives consequences over time involving lack of motivation, risk-taking, missed opportunities for innovation, and ultimately lead to poorer performance (White, 2009b). Forcing the leadership team out of the comfort zone has proven to be an effective tool to increase emotional intelligence, which directly impacts in better performance (Liepold et al., 2013).

In summary, regarding Cluster 2:

- Sums 21% of total leader's population with a relatively mature age profile, a predominant presence from support area, substantial leadership experience, and an average performance rating below the group's average

- Self-valuation and collaborator's valuation are very similar between them, but much lower than group average in all behaviours.

- Manager's valuation is lower than the other ratings, but also lower than average. This also may be related to lower performance and how supervisor rating is related to these results (Atkins & Wood, 2002b). The behaviour with lowest rating by the manager is Embrace change which may be related as in Cluster 1 to resistance to change in more stablished groups.

- Overall, all ratings in all behaviours are lower than group average which may reflect the concept of managerial mediocrity (Sengupta, 2022) and may be caused

by lack of motivation or emotional connection (Carter, A. D., 2023), in part due to be mainly in support functions instead of business, and comfort zone (White, 2009b).

Figure 19: *Cluster 2 behaviours 360 valuation*
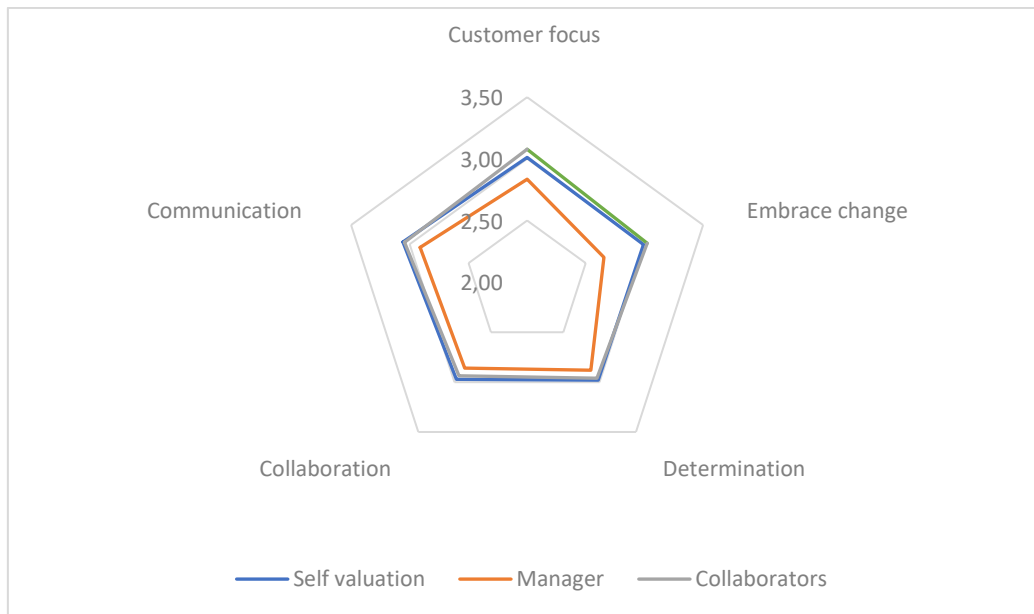
Source: Own elaboration

Table 19: *Cluster 2 behaviours valuation compared to group average*

% represent the relation between each valuation and the corresponding valuation for the whole population (including all clusters)

	Self valuation	Manager	Collaborators
Customer focus	-5%	-8%	-10%
Embrace Change	-5%	-9%	-11%
Determination	-4%	-5%	-11%
Collaboration	-7%	-7%	-11%
Communication	-1%	-5%	-9%

Source: Own elaboration

4.2.3. Cluster 3: Collaborative

Cluster 3 represents 23% of the total leaders' population, with an average age of 48 years—slightly below the group average. In this cluster, 23% of leaders are female, just below the average. Business area leaders make up 42%, aligning with the group, and the average tenure is 16 years. Notably, the performance rating for Cluster 3 is 3.01, exceeding the group average by 2%. In comparison to other clusters, Cluster 3 is distinguished by a relatively younger leadership demographic and a higher level of performance.

Analysing the behaviours within Cluster 3 can provide insights into the factors contributing to their relatively higher performance and the distinctive characteristics that set them apart from other clusters. Cluster 3's self-valuation reveals the lowest ratings across all behaviours, consistently falling below the group average in all aspects except collaboration, where it is 2% higher than average. In contrast, collaborators' valuation within the 360-degree assessment exhibits the highest ratings, surpassing the group average in all behaviours, particularly excelling in collaborative attitudes. Managerial valuation aligns with collaborators' high ratings, exceeding the group average across all behaviours. This discrepancy between self-valuation and external assessments, particularly from collaborators and managers, highlights potential areas for self-awareness for leaders within Cluster 3. Research regarding 360-degree assessment shows how highly competent ratees underestimate themselves while poorest performers tend to overestimate themselves (Atkins & Wood, 2002b).

Indeed, a self-valuation below average could potentially be indicative of an impostor phenomenon, reflecting an underlying sense of unworthiness or self-doubt. This disparity between self-perception and external evaluations may align with the characteristics associated with impostor syndrome, where individuals downplay their achievements and foster a persistent belief that they are not deserving of their success, particularly in environments characterized by high pressure and high achievement (Clance & Imes, 1978). Individuals experiencing the impostor phenomenon tend to

attribute their success to luck and not their own performance. This mindset is accompanied by low levels of confidence, and these individuals often impose exceedingly high expectations on themselves (Ross et al., 2001).

These types of leaders who underestimate themselves may exhibit traits associated with servant leadership, as suggested by prior research, that support the assertion that servant leaders tend to undervalue themselves due to their humility and prioritization of others (Sousa & van Dierendonck, 2017). Although many definitions of servant leadership have been made in recent years, we refer the new definition made by Eva in 2019 "Servant leadership is an other-oriented approach to leadership manifested through one-on-one prioritizing of follower individual needs and interests, and outward reorienting of their concern for self towards concern for others within the organization and the larger community" (Eva, N. et al., 2019).

Indeed, recent research suggests a correlation between the humility of top managers and firm performance. This link emphasizes the significance of humility as a leadership trait in influencing organizational outcomes. Leaders who exhibit humility are often associated with creating a positive work environment, fostering trust, and contributing to overall organizational success. This relationship extends beyond just financial performance and includes aspects of sustainable development. The presence of CEO humility fosters an environment of trust and sincerity within the organization, contributing to both performance outcomes and the long-term sustainability of the firm (Ren et al., 2020).

Humble leadership fosters innovation within the organization due to psychological primarily by establishing an environment of psychological safety. When leaders exhibit humility, they create a workplace culture where individuals feel safe to express their ideas, take risks, and contribute innovative solutions without fear of reprisal. This psychological safety encourages open communication, collaboration, and a willingness to explore new and creative approaches, ultimately fostering a more innovative and dynamic organizational environment (Zhou & Wu, 2018)(Zhou & Wu, 2018). Furthermore,

humble leadership impact in project success because of team -building environment (Ali et al., 2021).

In the evaluation of behaviours, collaboration emerges as the highest-ranked attribute in the 360-degree feedback, as assessed by all raters. This consistent high ranking across different perspectives highlights the importance and strength of collaborative skills within the individuals being evaluated. Collaboration refers to ability to move together within the organization, and it may suggest skills present in distributed and participative leadership. Leadership is seen as a response to the team's evolving needs and challenges, providing necessary resources for improved team adaptation and performance in subsequent cycles or stages of work. This approach recognizes that leadership is not solely an individual trait, but a collective outcome shaped by the interactions and collaborative efforts of team members (Day et al., 2004).

Participative leadership is characterized by its encouragement and support for employees to actively engage in organizational decision-making processes, and it has had growing attention in both theoretical discussions and practical applications (Wang, Q. et al., 2022b). Organizations should consider adopting a participatory leadership style, as it has been shown to boost employee morale and enhance organizational productivity. This leadership approach, which encourages active involvement and input from employees in decision-making processes, contributes to a positive work environment, increased employee satisfaction, and improved overall productivity (Akpoviroro et al., 2018).

Collaboration theory argues that trough collaboration an advantage is gained when achievement exceeds what any individual could have accomplished highlighting the unique and enhance outcomes that emerge from collective effort (Huxham, 1996). Collaboration skills have become increasingly relevant in contemporary organizations, particularly as many adopt less hierarchical structures. In this evolving organizational landscape, teamwork has assumed greater importance. The ability to collaborate effectively has become a key competency, facilitating smoother communication,

enhanced problem-solving, and the successful navigation of dynamic and interconnected work environments (Scott et al., 2018). Emerging leadership theories embrace non-hierarchical perspectives that focus on team-level relational processes. These theories are characterized by various terms that essentially capture the same concept, including shared leadership, distributed leadership, and collective leadership that refer in a broader way to "leadership as network" paradigm (Carter, D. R. et al., 2015). These frameworks highlight the shift away from traditional hierarchical structures, emphasizing the collaborative and collective nature of leadership within a team context.

In summary, regarding Cluster 3:

- Sums 23% of total leader's population with a relatively younger profile, less female presence, substantial leadership experience, and an average performance rating above the group's average

- Self-valuation below managers and collaborator's valuations and lower than group average, which may be related to higher performance (Atkins & Wood, 2002b) and impostor syndrome (Clance & Imes, 1978).

- Leaders who underestimate themselves may exhibit traits associated with servant leadership, due to their humility and prioritization of others (Sousa & van Dierendonck, 2017). Humility fosters an environment of trust and sincerity that impact to both performance outcomes and the long-term sustainability (Ren et al., 2020). Humble leadership impact in project success because of team -building environment (Ali et al., 2021).

- Collaboration is the behaviour valued the most by supervisor and collaborators. Leadership is not solely an individual trait, but a collective outcome shaped by the interactions and collaborative efforts of team members (Day et al., 2004). Trough collaboration an advantage is gained highlighting the unique and enhance outcomes that emerge from collective effort (Huxham, 1996). This behaviour is characteristic in Participative leadership (Wang, Q. et al., 2022b). Effective leaders build interpersonal relationships, build teams, collaborate with suppliers or

clients, and take responsibility for their own or group's actions (Park, S. et al., 2018).

Figure 20: *Cluster 3 behaviours 360 valuation*
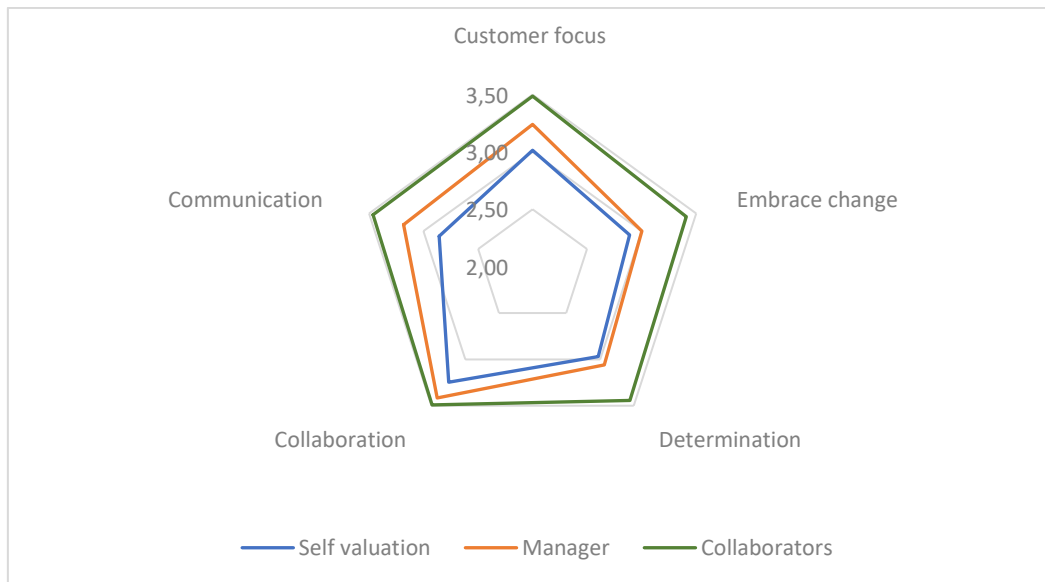
Source: Own elaboration

Table 20: *Cluster 3 behaviours valuation compared to group average.*

% represent the relation between each valuation and the corresponding valuation for the whole population (including all clusters)

	Self valuation	Manager	Collaborators
Customer focus	-5%	5%	2%
Embrace Change	-8%	3%	0%
Determination	-5%	1%	3%
Collaboration	2%	11%	6%
Communication	-7%	4%	3%

Source: Own elaboration

4.2.4. Cluster 4: Transformative

Cluster 4 stands out as the largest segment within the total leaders' population, comprising 31%. The average age is 48 years, slightly below the group average, with a notable 32% of leaders being female—significantly higher compared to the other clusters. Business area leaders make up 43% of this cluster, aligning with the group, and the average tenure is 16 years, consistent with the average. Importantly, Cluster 4 exhibits a performance rating of 3.08, surpassing the group average by 4%. In comparison to other clusters, Cluster 4 is characterized by a relatively younger leadership, more female presence, and the highest level of performance.

Cluster 4 demonstrates the highest ratings in all behaviours across evaluations from various raters. Collaborators' valuation stands out as the highest, with self-valuation and manager's valuation exhibiting striking similarity. This consistency in high ratings across all assessed behaviours emphasizes the strong performance and positive perceptions associated with leaders within Cluster 4. This is consistent with previous 360 feedback research in which we find that leaders who have the most impact in results stand out in all behaviours (Skipper & Bell, 2006).

In Cluster 4, the behaviours of "Embrace change" and "Determination" exhibit the highest differences when compared to the group average. These distinctions suggest that leaders within Cluster 4 particularly excel in embracing change and demonstrating a high level of determination, setting them apart from the broader group in these specific aspects of behaviour that lead to higher performance rating.

Indeed, fostering the competency of embracing change is essential for organizations seeking to gain a competitive advantage. The ability to adapt to and effectively manage change enables organizations to stay responsive to evolving market conditions, technological advancements, and other external factors (Alavi & Gill, 2017). This strategic flexibility relies on change management capabilities and the ability to implement this change trough a strategic plan (Zaccaro & Banks, 2004b). When leaders are able to drive the change towards the long-term strategic necessities while addressing the challenge

of the short-term, competitive advantage emerges (Llop & García-Arrizabalaga, 2014). This ability to effectively manage change has proven to be particularly relevant in recent years, especially during the Coronavirus crisis. Flexibility has emerged as a key competency for crisis management, encompassing versatility, agility, resilience, and robustness. Organizations demonstrating these qualities have been better equipped to navigate and respond to the multifaceted challenges posed by the crisis, showcasing the importance of adaptability and proactive change management in times of uncertainty, what has been called "super flexibility" which is defined as "dynamic capability to simultaneously withstand turbulence and adapt to fluid reality " (Evans, S. & Bahrami, 2020).

Leaders who really embrace change are characterized by 5 major behaviours (Onderick-Harvey, 2018b): a) communicating a compelling and clear purpose, b) proactively anticipating and discovering opportunities, c) identifying and addressing what is not working, d) encouraging calculated risk-taking and experimentation and e) pursuing collaborations that expand organizational boundaries. These behaviours support a positive environment where the organization remains agile, innovative, and well-positioned to thrive in dynamic and competitive business based on positive **human** relation context which drive willingness to change (Mumtaz et al., 2023).

Being an agent of radical change is a key characteristic of charismatic leadership, which is characterized by its willingness to take personal risks and visionary, idealistic outlook on the future. These qualities contribute to the ability to inspire and motivate followers, creating a sense of purpose and excitement around transformative initiatives. Charismatic leaders are not only change agents but also individuals who are willing to embrace risks and articulate a compelling vision that captivates and energizes those they lead (Conger & Kanungo, 1998b). Embrace change is also present in transformational leadership, theory that introduces a new paradigm that encompasses charismatic, visionary, inspirational, and change-oriented leadership (Bass & Bass Bernard, 1985a). This theory emphasizes the leader's ability to inspire and motivate followers toward achieving collective goals, fostering positive change and innovation within the

organizational context. The transformative approach transcends traditional leadership styles by focusing on the leader's capacity to create a shared vision and elevate followers to higher levels of performance and commitment (Bryman, 1992).

Envision the future and embrace change in an organization is key to compete due to the challenging environment organizations face. As John Kotter described in his book "What Leaders Really Do" (1999, p.51): "They don't make plans: they don't solve problems; they don't even organize people. What leaders really do is prepare organizations for change and help them cope as they struggle through it." (Kotter, 2000). Anticipatory leadership aims to transform the mindset of leaders' trough new framework of skills and capabilities such as awareness, authenticity, audacity, adaptability, and action (Ratcliffe & Ratcliffe, 2015), as we can see various leadership styles can serve as promoters in change management processes (Mansaray, 2019).

Besides embrace change behaviour, the recognition of determination as the second most valued behaviour emphasizes its significance in the context of organizational or individual change. Determination, in the context of leadership and change management, implies a resolute commitment to achieving goals and overcoming challenges. Leaders who exhibit determination are often persistent, focused, and unwavering in their pursuit of objectives, even in the face of obstacles. Pursuing goals allow to support inherent needs of human nature such as autonomy, competence and relatedness which are directly linked to well-being when there is an intrinsic motivation and the content of those goals are aligned with personal interests and values, as it is described in self-determination theory (Deci & Ryan, 2000). The theory emphasizes the importance of autonomy and internalization in goal pursuit for optimal psychological functioning. In the work environment. In the work environment managers and leaders who provide autonomy, acknowledge competence, and foster positive interpersonal relationships contribute to a work environment that supports employees' well-being and intrinsic motivation. On the other hand, reliance on external motivation and managerial behaviours that are controlling, or directive can have a detrimental impact. When individuals feel that their actions are externally regulated, driven by external rewards or

pressures, it may lead to a decrease in intrinsic motivation and well-being (Deci et al., 2017). Recent research affirm that intrinsically motivated employees are more likely to exhibit proactive behavior and take charge when their leader adopts an empowering style. Conversely, the same employees tend to reduce their proactive efforts in the presence of directive leadership. Therefore, organizations aiming to encourage self-initiated and change-oriented behavior, such as taking charge, should prioritize the development and adoption of empowering leadership practices (Kim et al., 2023). Determination is also an attribute of charismatic leadership which tend to lead and realize a purpose or vision (Conger & Kanungo, 1998a), and a key element of Transformational leadership (Bass & Bass Bernard, 1985a).

Self-determination is characteristic of Authentic leadership, in which the self-awareness concept results in increased self-acceptance, building positive relationships and facilitating personal growth and self-development. Authentic behaviours and actions are inherently self-determined, reflecting an alignment with one's true self and values (Ilies et al., 2005).

In summary regarding Cluster 4:

- The largest cluster with 31% of total population characterized by a relatively younger leadership, more female presence, and the highest level of performance. This cluster also present highest ratings in all behaviours across evaluations from all raters and above group average

- Embrace change is the behaviour with the highest rating, one of the four key behaviours for global leaders. Effective leaders need to be competent in inspiring others, envisioning change, and dealing with complexity to deliver successful change efforts in a complex or uncertain environment (Park, S. et al., 2018). This behaviour is related to Charismatic leadership (Conger & Kanungo, 1998b), Transformational leadership (Bass & Bass Bernard, 1985a) and Anticipatory leadership (Ratcliffe & Ratcliffe, 2015).

- Determination is the second most valued behaviour also compared to group average, which is a resolute commitment to achieving goals and overcoming challenges. Effective leaders prioritize, organize, and schedule work, develop and communicate clear, specific task goals and assignments, assess work progress and procedures, and identify the root of the problem and make decisions for solutions (Park, S. et al., 2018). This determination is explained by the self – determination theory (Deci & Ryan, 2000). And it is a key attribute of Charismatic (Conger & Kanungo, 1998a), Transformational (Bass & Bass Bernard, 1985a) and Authentic leadership (Ilies et al., 2005).

Figure 21: *Cluster 4 behaviours 360 valuation*
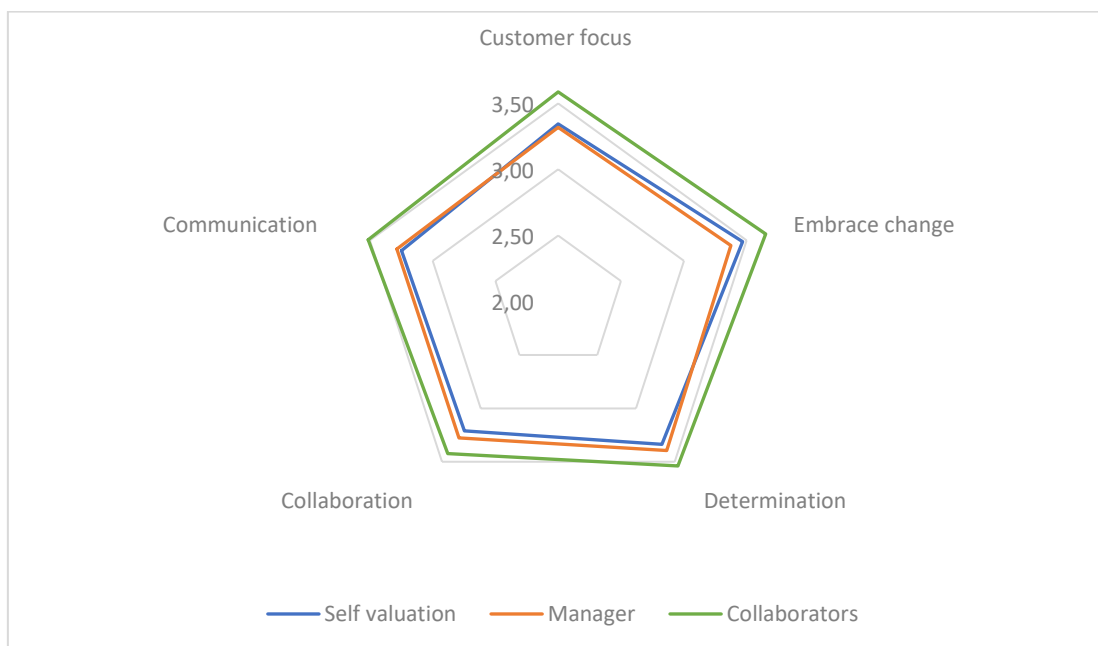
Source: Own elaboration

Table 21: *Cluster 4 behaviours valuation compared to group average.*

% represent the relation between each valuation and the corresponding valuation for the whole population (including all clusters)

	Auto	Manager	Collaboradores
Customer focus	5%	7%	5%
Embrace Change	10%	16%	8%
Determination	7%	12%	6%
Collaboration	1%	7%	4%
Communication	6%	8%	5%

Source: Own elaboration

4.2.5. Cluster 5: Impostor

Cluster 5 represents a relatively smaller subset, comprising only 4% of the total leaders' population. The leaders within this cluster have an average age of 48 years, slightly below the group average. Notably, 31% of these leaders are female, surpassing the average female representation of 27%. However, in terms of business area affiliation, only 31% belong to the business area, which is notably lower than the group average of 42%. Additionally, the average tenure of leaders in this cluster is 13 years, a significant deviation from the overall average of 16 years. In terms of performance, Cluster 5 exhibits the lowest performance rating among the clusters, with a score of 2.82. This rating is 5% below the overall average, indicating a comparatively lower level of performance within this particular cluster. In summary, Cluster 5 is characterized by leaders predominantly from support areas, exhibiting shorter tenure within the organization and significant representation of female leaders.

The assessments made by collaborators within Cluster 5 consistently surpass the ratings given by managers across all behaviours, with more emphasis on customer focus. This indicates that, from the collaborators' perspective, their behaviours, particularly related

to customer focus, are perceived more positively than how managers rate them. However, the surprising aspect is the comparatively low level of self-valuation across all dimensions and is the lowest when compared to the overall group average. This further highlights a unique pattern within this cluster, where individuals not only undervalue their behaviours in comparison to manager assessments but also exhibit a lower level of self-valuation when benchmarked against the broader group. This discrepancy suggests a potential gap in self-awareness or confidence among the individuals in this cluster and emphasizes the potential significance of addressing confidence-building initiatives.

Given that this cluster comprises leaders who are slightly younger and has a higher representation of females, it might indicate some socio-demographic effect in lower self-ratings. This can be seen in previous studies where biographical factors influence self-evaluation, such as gender, age, education, position, or race. Notably, research suggests that females tend to provide more accurate self-assessments, while males tend to rate their own capabilities more positively, and older managers tend to over-rate own performance versus younger managers. (Fleenor et al., 2010).

As we described in Cluster 3, a self-valuation below average could potentially be indicative of an impostor phenomenon, reflecting an underlying sense of unworthiness or self-doubt where individuals downplay their achievements and foster a persistent belief that they are not deserving of their success (Clance & Imes, 1978). This impostor phenomenon occurs in leadership roles where there are high expectations and responsibilities, and their related emotions of shame and fear have the potential to increase risk aversion and impact in performance. However, simultaneously, they may contribute to emotional exhaustion and diminish the leaders' motivation to lead (Kark et al., 2022a). Individuals experiencing impostorism face immediate challenges in performing effectively at work, leading to detrimental effects on their short-term success and potentially hindering their overall career progress (Hudson & González-Gómez, 2021).

This phenomenon has also been widely studied in women leadership and its impact in performance. Recent research affirms the impact of the impostor phenomenon on

performance is influenced by gender, but this relationship is also influenced by other factors, including workload and the specific role of being the CEO (Guedes, 2023).

Certainly, not all impostors share the same characteristics. A distinction can be made between two types of them: those who genuinely provide an adverse self-perception and those who intentionally present a form of self-representation. The former reflects individuals genuinely grappling with feelings of inadequacy, while the latter involves individuals purposefully projecting an image that may not align with their true abilities or achievements. Recognizing and understanding these nuances is crucial for addressing impostor phenomenon in its varied manifestations. (Leonhardt et al., 2017).

This negative perception of Cluster 5 might be affected by direct supervisor behaviour. Those who follow leaders with high levels of narcissistic rivalry tend to perceive these leaders as unsupportive, and it leads to negative outcomes in terms of followers' perceptions, emotions, and reported behaviour. Consequently, individuals in such leadership environments feel diminished support, a reduced sense of personal value, more negative evaluations of their relationships, and exhibit lower levels of engagement (Fehn & Schütz, 2021).

In summary, regarding Cluster 5:

- Only represent 4% of total population and it is characterized by leaders predominantly from support areas, exhibiting shorter tenure within the organization and significant representation of female leaders.
- Collaborator's rating is above manager's rating in all behaviours, but more pronounced in Customer focus. Both types of rating below group average.
- Very low self-valuation, and well below the group's valuation in all behaviours. This may be related to Impostor phenomenon effect, leaders who think they do not deserve their success (Clance & Imes, 1978), tend to detrimental effects on their short-term success and potentially hindering their overall career progress (Hudson & González-Gómez, 2021).

- This negative perception might be affected by direct supervisor behaviour where high level of narcissistic rivalry is present, which may affect to a reduced sense of personal value (Fehn & Schütz, 2021).

Figure 22: *Cluster 5 behaviours 360 valuation*
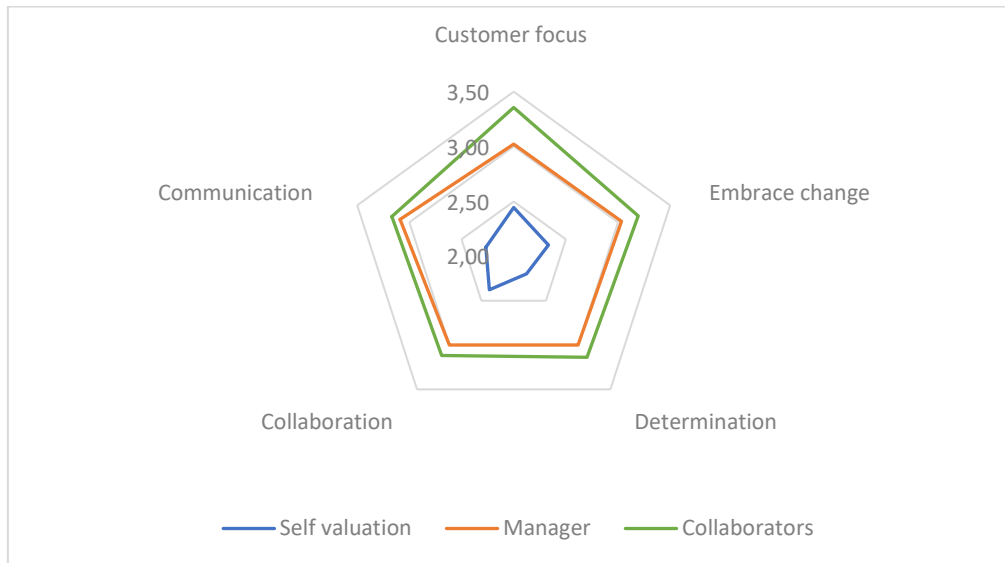
Table 22: *Cluster 5 behaviours valuation compared to group average*

% represent the relation between each valuation and the corresponding valuation for the whole population (including all clusters)

	Self valuation	Manager	Collaborators
Customer focus	-23%	-2%	-2%
Embrace Change	-26%	4%	-6%
Determination	-29%	-1%	-6%
Collaboration	-25%	-2%	-6%
Communication	-26%	1%	-6%

Source: Own elaboration

4.2.6. Cluster 6: Narcissist

Cluster 6 distinguishes itself as the smallest subset within the overall leaders' population, constituting only 1%. The leaders in this cluster have an average age of 49 years, slightly surpassing the group average. The representation of female leaders aligns with the group average at 28%. Notably, a mere 17% of individuals in this cluster hold leadership positions in the Business area, significantly lower than the group average. Crucially, Cluster 6 showcases a performance rating of 2.99, marginally above the group average by 1%. Additionally, leaders in this cluster have an average tenure of 18 years, marking a notable 14% increase over the group average. In comparison to other clusters, Cluster 6 is characterized by support area leaders who exhibit extensive experience.

The limited size of Cluster 6 may indeed have implications for the 360-valuation process since it might pose challenges or peculiarities in the evaluation dynamics. To address these challenges, careful consideration, and interpretation of the 360 valuations within the context of Cluster 6 are essential. In a very small cluster, the opinions of a few individuals could disproportionately influence the overall assessment, potentially introducing bias and any outliers or extreme ratings could have a pronounced impact on the overall results.

The most surprising aspect within Cluster 6 is the notably low valuation from collaborators, particularly in behaviours related to communication and collaboration. This observation suggests a discrepancy between how leaders in this cluster perceive their own performance in these specific areas and how their collaborators evaluate them. The leadership style within Cluster 6 might have characteristics that collaborators find less favourable in terms of communication and collaboration, however, given the small size of Cluster 6, the low collaborators' valuation might be influenced by a limited number of collaborators providing feedback. Exploring whether there is a representative and diverse set of collaborators involved in the valuation process should be crucial. Comparing to population average, collaborator ratings are much lower while self-

valuation is higher in 3 out of the 5 behaviours. Manager valuation is aligned with average but for customer focus and collaboration.

Research on the efficacy of 360-degree feedback tools indicate that ratings provided by subordinates and peers tend to be the most predictive of leader effectiveness, whereas self-ratings are generally considered the least predictive. In other words, when assessing the effectiveness of a leader using a 360-degree feedback tool, the opinions and evaluations provided by individuals who work alongside the leader (subordinates and peers) are found to be more indicative of leadership effectiveness compared to the leader's own self-assessment (Fleenor et al., 2010). Previous research also highlighted the phenomenon observed that in highly competitive team environments, leaders who excel tend to underestimate their own abilities when compared to others. On the other hand, leaders with lower competence levels in these competitive settings tend to overestimate their abilities relative to their peers (Atkins & Wood, 2002b).

In Cluster 6, while cautious interpretation is warranted due to the cluster's small size, the notably low ratings provided by collaborators may suggest that leaders within this cluster exhibit behaviours that have a negative impact on teams working closely with them. This valuation according to previous affirmation could suggest less effective and lower competence leaders.

In addition to previous observation, the fact that self-valuation is higher than any other rating, particularly in behaviours where collaborators provide the lowest ratings, may suggest a notable pattern within Cluster 6. This high self-valuation might be influenced by various personality factors and individual characteristics such as dominance, self-esteem, or narcissism (Fleenor et al., 2010). Specifically, narcissism is personal trait that has been present in many powerful leaders, it was introduced in the field of leadership trough a new definition by Rosenthal (2006) "Narcissistic leadership occurs when leaders' actions are principally motivated by their own egomaniacal needs and beliefs, superseding the needs and interests of the constituents and institutions they lead" (Rosenthal, S. A. & Pittinsky, 2006). These are characteristics present in destructive

leadership theories that have been widely researched which reflects a growing interest within the academic community of the need to explore not only the positive attributes of leadership but also the potential drawbacks and negative consequences associated with certain leadership styles. As a result, a substantial body of research has emerged, focusing on concepts and behaviours that fall under the umbrella of negative leadership (Khizar et al., 2023).

Different negative leadership styles have been described in the past two decades as abusive leadership (Tepper, 2000) or toxic leadership, that was defined as "individuals, who by dint of their destructive behaviours and dysfunctional personal qualities, generate a serious and enduring poisonous effect on the individuals, families, organizations, communities, and even entire societies they lead" (Lipman-Blumen, 2005). Einarsen (2007) defined a conceptual framework to describe leadership based on destructive behaviours in three categories such as tyrannical, derailed, and supportive-disloyal leadership (Einarsen et al., 2007). Despotic leadership theory emerged looking at leader's social responsibility (De Hoogh & Den Hartog, 2008). All these types of destructive leadership have negative effects on subordinates undermining motivation, well-being, job-satisfaction, and performance (Einarsen et al., 2007) and it could affect the entire organisation. It's plausible that leaders exhibiting characteristics associated with negative leadership styles may engage in behaviours that hinder effective collaboration and teamwork. Such behaviours could create an unfavourable working environment, contributing to lower evaluations from collaborators. Factors like dominance, self-esteem, or narcissism, which were earlier mentioned in the context of high self-valuation, could also play a role in negative leadership styles, and subsequently impact collaborator ratings.

In summary regarding Cluster 6:

- This Cluster only represent 1% of the total population with an age average aligned with total population, similar presence of female leaders and mainly leaders from support areas with higher tenure, and performance slightly above the group.

- Self-valuation is higher than any other rating, which might be influence by personal traits as narcissism or self-steem (Fleenor et al., 2010). This leads to Narcissism leadership (Rosenthal, S. A. & Pittinsky, 2006).

- Embrace change and determination behaviours are valued by manager above the average, which might lead to better performance in the short term, while collaboration is the worst both by collaborators and the manager.

- Collaborator's rating much lower than the others and the group average. This might be related to destructive leadership theories with may have negative effects in subordinates and colleagues (Einarsen et al., 2007).

Figure 23: *Cluster 6 behaviours 360 valuation*
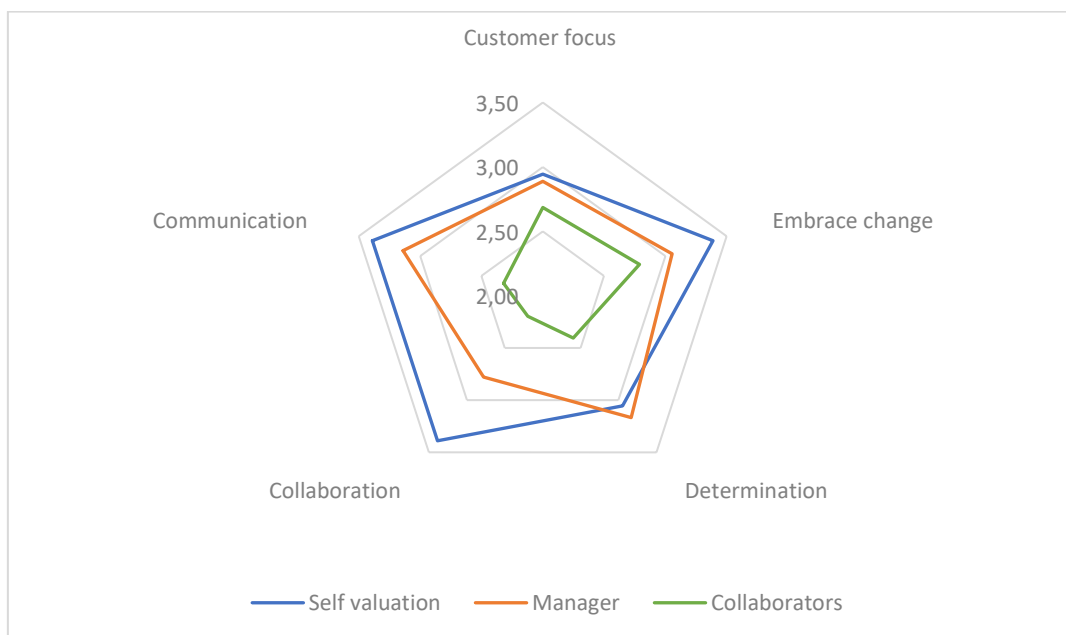
Source: Own elaboration

Table 23: *Cluster 6 behaviours valuation compared to group average*

% represent the relation between each valuation and the corresponding valuation for the whole population (including all clusters)

	Self valuation	Manager	Collaborators
Customer focus	-7%	-6%	-21%
Embrace Change	8%	5%	-18%
Determination	-2%	5%	-28%
Collaboration	6%	-10%	-33%
Communication	10%	3%	-31%

Source: Own elaboration

Table 24: *Cluster valuation*

Behaviours 360 valuation	Change aversion	Comfort zone	Collaborative	Transformational	Impostor	Narcissist	Average
Customer focus	3,28	3,01	3,32	3,39	3,18	2,83	3,26
Embrace Change	3,13	2,91	3,19	3,39	3,08	2,85	3,17
Determination	3,17	2,93	3,25	3,36	3,04	2,85	3,18
Collaboration	3,20	2,97	3,36	3,31	3,07	2,67	3,21
Communication	3,24	3,02	3,29	3,37	3,10	2,76	3,23
360 Self valuation	**3,31**	**3,00**	**3,00**	**3,32**	**2,32**	**3,23**	**3,14**
Customer focus	3,42	3,01	3,01	3,34	2,44	2,94	3,18
Embrace Change	3,22	2,99	2,89	3,47	2,33	3,39	3,14
Determination	3,27	2,98	2,97	3,34	2,20	3,06	3,12
Collaboration	3,42	2,97	3,25	3,21	2,38	3,39	3,18
Communication	3,20	3,06	2,86	3,25	2,27	3,39	3,08
360 Manager valuation	**2,61**	**2,83**	**3,18**	**3,33**	**3,03**	**3,01**	**3,03**
Customer focus	2,85	2,84	3,24	3,32	3,02	2,89	3,09
Embrace Change	2,34	2,65	3,00	3,37	3,03	3,06	2,91
Determination	2,55	2,88	3,06	3,39	3,00	3,17	3,02
Collaboration	2,64	2,86	3,42	3,28	3,00	2,78	3,08
Communication	2,68	2,91	3,18	3,29	3,09	3,14	3,05
360 Collaborator valuation	**3,45**	**3,01**	**3,46**	**3,54**	**3,19**	**2,48**	**3,36**
Customer focus	3,52	3,08	3,49	3,59	3,36	2,69	3,42
Embrace Change	3,46	3,02	3,41	3,65	3,19	2,79	3,40
Determination	3,42	2,96	3,44	3,54	3,14	2,40	3,34
Collaboration	3,39	2,94	3,49	3,42	3,12	2,20	3,30
Communication	3,45	3,04	3,46	3,51	3,17	2,32	3,36
Average Age	**50,27**	**49,96**	**48,72**	**48,36**	**48,00**	**49,33**	**49,17**
Average Tenure	**16,18**	**15,96**	**16,56**	**16,60**	**13,78**	**18,61**	**16,30**
Average what_performance	**2,85**	**2,83**	**3,01**	**3,08**	**2,82**	**2,99**	**2,95**

Source: Own elaboration

4.3. Regression results and interpretation

After clustering results, a regression analysis has been deployed to find out the relation between these identified clusters and performance outcomes regarding quantifiable objectives, involving the integration of other pertinent personal and professional attributes specific to each leader. Indeed, regression analysis is a widely employed statistical tool in research to explore and quantify relationships between various variables.

To proceed with the analysis, we use the program Gnu Regression, Econometrics and Time-series Library (GRETL) which may be downloaded free, it is a powerful open-source software, and it has been identified as a useful research tool (Mixon Jr, 2009). Data was prepared for Gretl analysis applying one hot encoding and variable typification to create the regression using Gretl.

Once we apply the model, we test the presence of heteroscedasticity, which is a violation of one of the assumptions of classical linear regression. Test White is applied to determine if there is evidence of heteroscedasticity in the residuals of the regression model. It is based on regressing the squared residuals on the independent variables. As *p =0.023025* it refers there is need to include robust standard deviation. We also apply Test Breutsh – Pagan heteroscedasticity test and the result with *p = 0.001619* reveals we must use robust standard deviations.

The analysis employs a minimum square regression model with robust standard deviations. In this model, the dependent variable is the "performance rating," and the independent variables encompass not only the cluster assignments, but also additional data collected from each leader.

Collinearity test is applied to check if two or more independent variables in a regression model are highly correlated with each other since it may cause problems in estimating the individual coefficients of the variables and interpreting the results. Results of the Variance Inflation Factors (VIF) evidence there is no collinearity.

Remsey test is also applied to check if there is any interaction problem. For the contrast of specification using both squares and cubes, the F-statistic is *1.912720,* and the associated p-value is *0.148.* This p-value indicates that there is not enough evidence to reject the null hypothesis that the additional terms (squares and cubes) are jointly insignificant in the model. In the case of the contrast of specification using only squares, the F-statistic is *3.486891,* and the corresponding p-value is *0.0621*. This suggests that there is some evidence to suggest that the squared term may have a significant effect in the model, although this evidence is not strong enough to reject the null hypothesis at conventional significance levels. Similarly, for the contrast of specification using only cubes, the F-statistic is *0.162002*, and the p-value is 0.687. In this case, the high p-value indicates that there is not enough evidence to suggest that the cubic term is significant in the model. Overall, these results provide insights to conclude that there is no significant evidence to suggest that there are functional form misspecifications in the model according to the criteria of the Ramsey RESET test. This implies that the model's functional form adequately captures the relationship between the independent variables and the dependent variable.

Table 25: *Ramsey's Reset Test*

Contrast type	F-statistic	P value
Squares and cubes	*1.912720*	*0.148*
Only squares	*3.486891*	*0.0621*
Only cubes	*0.162002*	*0.687*

Source: Own elaboration

Finally, we apply Chow test statistical test used to determine whether there are significant differences in the coefficients of a regression model between different groups or subsets of data. It is particularly useful when we want to assess if the regression parameters are consistent across different subsets of observations. We have analysed

chow test for Genero subsets, and p value is 0.48 so we can affirm that there is not enough evidence to conclude that there are structural breaks in the relationships between variables. Based on the aforementioned tests, we can conclude that the regression analysis is satisfactory, so, we can now proceed to analyse and interpret the results.

The regression analysis reveals seven independent variables that exert a significant impact on target's performance, with their influence ranked in descending order, three of them regarding to cluster pertaining, and four of them regarding age and seniority of leaders and team members.

Firstly, cluster variable was created through the cluster analysis previously explained and is not directly observable. Notably, being a leader from Clusters 2, 5, and 1, ceteris paribus, is associated with lower performance impact compared to Cluster 4, which serves as the reference category for comparison. These three variables stand out for their elevated level of significance in predicting performance outcomes.

Regarding Cluster 2, labelled as "Comfort zone," it exerts a negative impact on performance, representing 21% of the total population. This cluster is characterized by consistently lower ratings in all behaviours compared to the group, especially in collaborator ratings. The leaders in this cluster tend to have a mature age profile, with a significant presence of older leaders and a predominant representation from the support area. Organizations face challenges when ineffective leadership is not actively managed and lacks a structured, measurable feedback, and leadership development process (Moore, 2011). As we mentioned previously, this type of leader may arise the concept of managerial mediocrity, which is key to manage for organizations success (Sengupta, 2022) and the "Comfort zone" concept (White, 2009b)

Similarly, being a leader in Cluster 1, identified as "Change aversion," negatively impacts performance. This cluster comprises 20% of the leader population and shares a relatively mature age profile, with a predominant presence from the business sector and a significantly lower representation of female leaders. Notably, there is a significant

difference between manager and collaborator ratings in this cluster, with determination and embrace change receiving the lowest ratings from managers. For Cluster 1, which is characterized as "Change aversion," there is a notable pattern where manager ratings align with lower performance, while self-ratings are considerably higher, which is supported by previous research in 360 feedback (Atkins & Wood, 2002c). This discrepancy between manager and self-ratings suggests a potential difference in the leader's perception of their own performance compared to how their managers perceive it. The cluster's resistance to change, as indicated by lower ratings in determination and embrace change, may contribute to this divergence in evaluations.

Cluster 5, labelled as "Impostor syndrome," although representing only 4% of the total leaders, also shows a negative relationship with performance. This cluster has a higher-than-average female presence, less tenure, and is characterized by very low self-ratings, which can be associated with the impostor phenomenon. Specifically in the case of women, when they experience impostor syndrome, firm performance is negatively affected (Guedes, 2023). The feelings associated with the impostor syndrome may contribute to increased risk aversion and could potentially impact leader performance. (Kark et al., 2022a).

Secondly, the analysis reveals a direct relationship with performance in four observed variables. Two of these variables pertain to leader characteristics, and the other two relate to team composition. The age of leaders emerges as a significant factor, indicating that, ceteris paribus, younger leaders tend to have a more substantial impact on target performance. Additionally, leaders with higher levels of tenure, ceteris paribus, exhibit a positive association with performance. Moreover, the impact of performance is influenced by the composition of leaders' teams. Teams characterized by greater seniority and more presence of top executives are correlated with a more pronounced impact on performance.

Age and tenure, as observable variables, have been widely researched in relation to leadership outcomes such us innovation, creativity, performance, or organizational

climate. A meta-analysis review including 98 empirical studies concluded that there is not enough evidence to affirm older and more tenured workers are less innovative (Ng & Feldman, 2013). However, regarding leadership impact, Chowdhury & Fink (2017) demonstrated by analysing the entire S&P 1500 universe, that senior CEOs exhibited a diminished responsiveness of Research and Development (R&D) expenditures to growth opportunities, leading to significant reductions in the systematic risk of their firms compared to their younger counterparts (Chowdhury & Fink, 2017). This is consistent with the position that younger leaders are likely to be less risk averse than older ones (Hambrick & Mason, 1984). Leaders who exhibit a higher propensity for risk-taking are likely to promote the development of more adaptable and flexible organizational cultures, as suggested by research (Kalliath, Bluedorn, & Strube, 1999). Research with 100 fintech firms discovered the relevance of socio-demographic characteristics of the leaders, in which age was of them (Sannino et al., 2020).

However, regarding leadership life cycle, Hambrick and Fukutomi (1991) showed how the relation between the time a CEO spends in their position ("time-in-job") and corporate performance follows a curvilinear pattern, resembling an inverted "U" shape due the five "seasons" of tenure: response to mandate, experimentation, selection of an enduring theme, convergence, and dysfunction (Hambrick & Fukutomi, 1991). The response to the mandate phase is related to short-term impact and performance, suggesting that younger CEOs may have more influence on short-term goals, as indicated in our study where younger leaders have more impact in the annual performance review target achievement.

Indeed, the impact of tenure on performance can vary, and different studies have shown both positive and negative associations. The relationship between tenure and performance is often influenced by various factors, including the nature of the industry, the specific context of the organization, and the individual characteristics of the leaders. It's crucial to consider these factors when interpreting the impact of tenure on performance in a given study. In a study encompassing 100 organizations across the computer, chemical, and natural-gas distribution industries, executive-team tenure was

identified as a significant factor influencing both strategy and performance. The research indicated that managerial teams with longer tenures tended to adopt more enduring strategies (Finkelstein & Hambrick, 1990).

More recent research also reinforced the relation between CEO tenure and target performance (Liu et al., 2018) and the relation regarding different types of tenure, internal and external with performance (Garcés-Galdeano & García-Olaverri, 2019). Consistently, a study of 788 listed companies in Malasya revealed that longer-tenured executives are inclined to pursue less risky strategies and decisions. Additionally, the research revealed a positive relationship between extended executive management tenure and corporate performance, suggesting that longer-tenured executives contribute to improved overall organizational success (Atayah et al., 2022). This aligns with our research findings, indicating that leaders with longer tenures tend to have a more positive impact on performance. This effect may be attributed to their deeper understanding of the organization and broader network of connections within the company. Performance might also be influenced due to strong psychological safety derived from team tenure as is suggested by Koopmann (2026), the research discovered that team tenure exhibited a curvilinear relationship with both team psychological safety climate and climate strength (Koopmann et al., 2016). And also due to internal and informal networks that prevent organizational silos emergence and are influenced positively by age and management tenure leadership (Mouta & Meneses, 2021). This effect had been appointed by Kleinbaum (2008) who suggested that senior leaders have a key role in transforming the organisation to promote internal cooperation and favour informal networks relations (Kleinbaum, 2008). This concept was also supported by a case study of 25 UK high growth companies in declining sectors, where it was revealed that longer tenure managers had an impact in performance, due particularly their tendency to cultivate and nurture various informal and formal external networks. This involves establishing enduring personal connections and relationships over the long term (Bamiatzi, 2009).

Combining age and tenure, recent research in India with 138 listed companies confirms our finding regarding impact on performance. In the study, it is observed that as CEOs age, there is a negative impact on sustainable growth, conversely, CEO tenure exhibits a significant and positive association with corporate sustainable growth (Mukherjee & Sen, 2022). Determining the optimal combination of age and tenure for leadership in the organization can be a complex task and may vary depending on the specific context, industry, and organizational goals. However, this regression analysis has provided insights into the relationships between these variables and performance outcomes. It appears that more tenure leader with the lowest age could have more impact in performance, what may suggest that certain level of experience and familiarity with the organization combined with the more risk appetite of younger leaders may contribute to better performance outcomes. The idea that a mix of experience and a willingness to take risks can contribute to improved performance aligns with contemporary leadership literature. It acknowledges the importance of adaptability and innovation, especially in dynamic and competitive environments.

In summary, a regression analysis unveils the connection between leader attributes and characteristics and performance. Belonging to Cluster 2 labelled "Comfort zone," as well as displaying characteristics of "Change aversion" and "Impostor syndrome," is associated with a negative impact on annual performance targets. Conversely, younger leaders exhibit a positive relationship with performance, and being a more senior leader and having experienced team members show a significant positive correlation with performance. To enhance organizational performance, it might be beneficial to consider strategies that leverage the positive aspects associated with more senior leaders, leaders with experienced team members, and younger leaders. This could involve targeted leadership development programs, mentorship initiatives, and efforts to create a collaborative and supportive team environment. Additionally, addressing the challenges identified in Clusters 2, 1, and 5 (Comfort zone, change aversion, and Impostor syndrome) could involve tailored interventions. For instance, providing support and

resources for leaders in these clusters to enhance their adaptability, embrace change, and build confidence could contribute to overall organizational effectiveness.

Table 26: *Regression model*

Minimum square regression model
Dependant variable: Performance rating (annual targets valuation)
Robust standard deviations to heteroscedasticity

	Coefficient	Standard deviation	"t"	P Value	
Const	0.235570	0.0618745	3.807	0.0001	***
Gender	0.0304697	0.0622966	0.4891	0.6249	
Business area	-0.0812163	0.0609044	-1.334	0.1826	
Cluster 1	-0.372277	0.0840960	-4.427	$1.05e^{-05}$	***
Cluster 2	-0.433991	0.0809905	-5.359	$1.02e^{-07}$	***
Cluster 3	-0.114599	0.0765985	-1.496	0.1349	
Cluster 5	-0.432549	0.174760	-2.475	0.0135	**
Cluster 6	-0.151397	0.231279	-0.6546	0.5129	
Age	-0.100803	0.0330034	-3.054	0.0023	***
Tenure	0.0891665	0.0342506	2.603	0.0094	***
% women - team	0.00796146	0.0285814	0.2786	0.07806	
% <40 - team	-0.0275337	0.0436101	-0.6314	0.5279	
% >60 - team	-0.0468823	0.0287437	-1.631	0.1032	
Age team	-0.0293201	0.0490152	-0-5982	0.5498	
Tenure team	0.145017	0.0472951	3.066	0.0022	***
% Top position - team	0.0667650	0.0247862	2.694	0.0072	***
% STEM - team	0.0243301	0.0293765	0.8282	0.4077	
Sum residuals square	1.045.094	Standard Deviation regression	0.960000		
R2	0.092013	R2 adjusted	0.078401		
F(17, 1134)	7.547.588	Valor p (F)	$5.49e^{-18}$		
Log - verosimilitud	-1.578.519	Akaike criteria	3.193.037		
Scharz criteria	3.283.924	Hannan - Quinn	3.227.343		

Source: Own elaboration

4.4.   Main results

As a result of the clustering, 6 different segments of leaders are identified. The most relevant which accounts for 31% of population is the "Transformative" one, connected to the Transformational leadership theory where determination and embrace change are the most valuable behaviours with the best performance results. The next cluster relates

to "Collaborative" and it sums 23% of total leaders. This type of leaders refers to Participative and Distributed leadership theory where collaboration and humility are the key main behaviours. Then, who other cluster are idented with less positive results, what we have called "Change aversion" and "Comfort zone" which represent 20% and 21% respectively. And the last one, very small, is "Narcissist" which refers to Destructive leadership theories whit very high self-valuation and very low collaborator's valuation.

**Figure 24:** *Summary Clusters*

Source: Own elaboration

Figure 25: *Average Perfomance valuation in each cluster – Own elaboration*
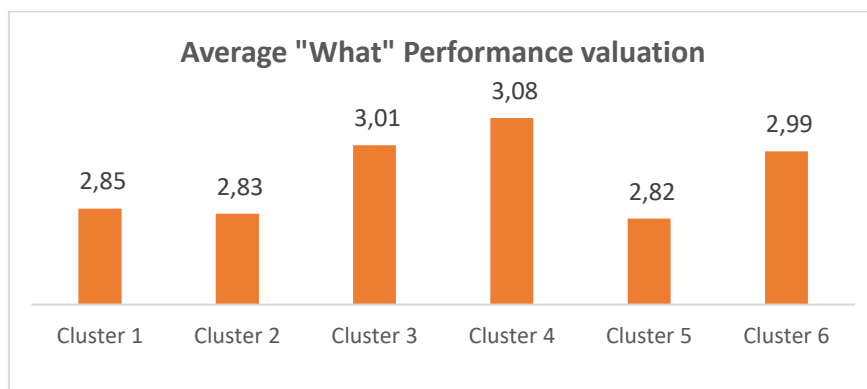
Source: Own elaboration

The result of each of the clusters is aligned with the literature on leadership theories where Transformational and participative show better results in performance than others. We also found in the literature how change aversion and the comfort zone can lead to worse results in the organization. Likewise, in the destructive leadership theories we find narcissistic leadership can have a negative impact. What clustering brings to the literature is to identify what types of leaders are found in an organization and what they are like.

Regarding regression analysis, results show seven independent variables that have a significant impact on performance rating. Three of them regarding to cluster pertaining, and four of them regarding age and seniority of leaders and team members.

Firstly, being a leader from Clusters 2, 5, and 1, ceteris paribus, is associated with lower performance impact compared to Cluster 4, which serves as the reference category for comparison. These three variables stand out for their elevated level of significance in predicting performance outcomes.

Secondly, the analysis reveals a direct relationship with other four variables, two of them refers to the leader, and the other two relate to team composition. The age of leaders is a significant factor, indicating that, ceteris paribus, younger leaders tend to have a more substantial impact on target performance. Leaders with higher levels of tenure, ceteris paribus, exhibit a positive association with performance. Moreover, the impact of performance is influenced by the composition of leaders' teams. Teams characterized by greater seniority and more presence of top executives are correlated with a more pronounced impact on performance.

The regression results are in line with previous literature on the impact of different types of leadership on performance, and also on the relationship between leader profile in relation to age and seniority. What the regression provides is a global impact analysis considering the different characteristics of a leader and their team composition, based on a previous clustering. In this way, it is possible to combine the aggregate effects of

different variables of the leaders on the results of the organization, and provides a new methodology that could be practically applied in the field of human resources management.

Chapter 5

Discussion and Conclusions

5.1   Discussion of results

Throughout this research we have carried out a review of all the literature related to different aspects of leadership in order to contextualize the analysis of the reality of leadership in a multinational organization and its impact on results. Through the application of machine learning to the 360 feedback data first, and then with a regression with additional sociodemographic and professional data, we have obtained relevant conclusions that can help in the decision making process of Human Resources with the aim of improving the effectiveness of the leadership team.

This research contributes to existing literature because it is based on real and complete data of an organization's leadership as opposed to empirical studies that are based on specific surveys and small samples. Through robust information coming from human resources systems and applying machine learning to behavioural data, we contribute with a new vision of how to use 360 feedback source and define a new methodology in the field of HR analytics to improve decision-making process in leadership development towards building a sustainable competitive advantage based on human capital.

This research aims to cover a notable gap in literature through a Business case study, reviewing leadership theories applied to organization reality and its impact in performance, to identify key elements to consider in improving the leadership development practices in the Human Resources management field.

How are the type of leaders in a global organization using actual leadership data from 360-degree feedback?

The academic literature on leadership development and effectiveness comprises different areas of research that we have described in this research. First, leadership theories delve into the characteristics of leaders, the relationship between leaders or the context in which leadership occurs. Among the most relevant theories in academic history, it is worth highlighting the Transformational Leadership Theory (Bass & Bass Bernard, 1985a), which was a major turning point in the evolution of research, and in more recent years, Authentic leadership (Gardner et al., 2011b) and Participative leadership (Wang, Q. et al., 2022b). Generally, theories describe the leader, or the relationship of this leader with his or her employees and the organizational context and empirical studies usually refer samples and specific surveys related to the research question.

Secondly, since theories present different types of leaders with different skills and characteristics, competency and skills models emerge in the field of human resource management (Bird, 2017). Thirdly, it is not only important to know what types of

leadership exist and what characteristics they have, but also how they can be developed in an organization. In this area, research on the development of leaders and leadership through different practices in human resources, including the 360º feedback tool, is framed within this field (Day, 2000). Finally, in recent years there has been a growing trend in the use of people analytics as part of the process of improving decision making in the field of human resources (McCartney & Fu, 2022).

The novelty of this research is that it allows us to analyse the reality of leadership in an organization through a business case, where we can describe what types of leaders exist through the use hierarchical clustering with 360 feedback data in the valuation of five key competencies combining all the effects that influence the evaluators' assessments. This is a novelty in the literature because there is no empirical clustering exercise with the 360 data and provides a new methodology to identify types of leaders that allow us to define differentiated actions with the Human Resources management team. The identification of clusters of leaders is determined by the rating level of each of the evaluators in the 5 behaviours evaluated, and as a result of the clustering application, 6 clusters of leaders have been identified, which are differentiated according to the rating level and the relationship between them.

As a result of this analysis, we can conclude:

- In an organization with a large management team, there are different types of leaders according to the evaluation of their behaviour. These leaders are related to different leadership theories and states, both positive and negative with different impact on performance which determine different potential leadership development interventions. We identify 6 types of leaders in an organization that present differences in age, type of activity and performance evaluation.
- There are two types of leaders that are related to Transformational Leadership and Participative Leadership that are the ones that present the best results in the performance evaluation, and represent 31% and 23% respectively. These leaders excel in everything in general, but most notably in driving change, determination

and collaboration. Therefore, these are the three capabilities that would be best developed throughout the organization.

- There is another type of leadership with less positive results, and very residual, but which can generate negative effects in the organization. The cluster related to narcissistic leadership may present certain negative behaviours in employees that should be managed.

- Finally, we identify three other segments related to Change Aversion, Comfort Zone and Impostor Syndrome that show worse results in the performance evaluation. It would be relevant to analyse these segments of leaders in order to define personalized actions that could combat these three effects in order to improve overall performance.

The presence of leaders with traits more associated with transformational leadership is the largest with 31% of total population, and we can also affirm that it is the segment that represents the best performance. These leaders stand out notably in everything, but especially in the drive for change and determination. This finding is aligned with the literature where there are numerous studies demonstrating the impact of transformational leadership on performance better than other leadership styles (Lashari & Rana, 2018), (Ojokuku et al., 2012b), (Al Khajeh, 2018), (Mittal & Dhar, 2015), (Wang, G. et al., 2011b). Transformational leadership is one of the most relevant contributions in leadership literature and it characterized by a great charisma and idealized influence in the organization, and inspirational motivation for those who work with this type of leaders, a constant intellectual stimulation for the team's creativity and a special sensitiveness and consideration of the members of the team (Bass & Bass Bernard, 1985a).

The second most important cluster with 23% of total population corresponds to what we have called "Collaborator", given that collaboration is the behaviour that stands out most among the evaluations, but also in relation to the group average. Collaboration is

key, especially in this competitive and rapidly changing environment. The ability to collaborate across the organization to make the most effective decisions is critical in sustaining the organization's success. Collaboration theory argues that an advantage is gained when collective achievement exceeds what any individual could have accomplished through collaboration (Huxham, 1996). This noted ability to collaborate may partly explain the performance of this segment, which presents the second best level of performance rating and is associated with Distributed leadership and Participative leadership. This type of leadership is characterized by its encouragement and support for employees to actively engage in organizational decision-making processes (Lam et al., 2015b). It is present in many companies where empowerment and openness of employees are fostered in contrast with other leadership styles (Huang et al., 2021), especially in this changing and challenging competitive context. Leadership is not only an individual subject, but a collective outcome shaped by the interactions and collaborative efforts of team members (Day et al., 2004).

As a result of these two clusters, 54% of leadership team is formed by leaders who present excellence in behaviours so relevant for organizational performance such us embrace change, determination and collaboration, and present the best levels of performance. It seems that promoting more deeply Transformational and Participative leadership behaviours could be an action to consider in the organizational leadership interventions. These two clusters may be connected to the concept of "fundamental state of leadership" which results in higher performance by fostering increased awareness, positive influence, clarity of vision, self-empowerment, empathy, creative thinking, inspiration, and a focus on continuous improvement. Leaders operating in this state are better equipped to navigate challenges, inspire their teams, and drive performance towards success. This state impacts inspiring other with positive behaviour, promoting a culture of trust and connections, with high standards of performance to achieve collective goals (Quinn, 2005).

Besides these two segments, as we described in previous chapter, there are other two relevant clusters which represent 20% and 21% of total population named "Change aversion" and "Comfort zone" respectively that present lower levels of performance. "Change aversion" as the opposite of embrace change is the most relevant characteristic, jointly with a level of self-esteem derived from higher self-valuation in contrast with manager valuation, older profile and more male presence than average. Change aversion might be the reason of lower performance since resistance to change can hinder the success of organization effort when change has the potential to disrupt the interests and values of well-established groups. In this situation, when change aversion is strong, charismatic leadership should emerge in opposition to the impeding change (Levay, 2010). Leadership plays a crucial role in proactively addressing resistance, thereby ensuring a positive and productive outcome for organizational change initiatives (Hubbart, 2023a). In order to manage this resistance to change, a specific intervention should be analysed for this relevant cluster in order to promote openness to change. Leaders in the organization should be agents of change so, having a relevant proportion of change aversion leaders, may impede facing competitive challenges. It is crucial to ensure an inclusive, empathetic and considerate environment with specific attention to change buy-in, trust and acceptance of the main leadership team to foster change within the organization (Hubbart, 2023b). By adapting management style to the coping cycle (Carnall, 2007), leaders can effectively guide individuals through the process of change, support their transition to new ways of working, and ultimately enhance performance and organizational resilience (White, 2009b).

The fourth cluster named "comfort-zone" refers to a cluster which present the lowest level of valuation overall and compared with average population, and it may refer to managerial mediocrity, an area that has received limited attention in research but has an impact in organizational performance. In order to improve leadership effectiveness, it is crucial to recognize and manage this type of leadership (Sengupta, 2022) because it may impact negatively organizational performance, and should not be nor permitted

nor promoted (Kerfoot, 2009). Ensuring actions to increase the sense of belonging and motivation of these leaders to connect emotionally and inspire proactive engagement would be required (Carter, A. D., 2023). Recognizing leaders in their comfort zone to design actions to move out from this state could lead to better outcomes. Moving leaders out of their comfort zone may increase emotional intelligence and impact positively in performance (Liepold et al., 2013), and dealing with this state involves taking proactive steps to step out of familiar territory, embrace change and pursue growth opportunities. Doing so requires setting clear goals, taking calculated risks, seeking new experiences, continuous learning, seeking feedback, challenging assumptions, embracing discomfort and celebrating progress (White, 2009b). Managing aversion change and comfort zone state should be crucial to increase effectiveness and achieve better outcomes defining and implementing different interventions. These actions could lead to improve efficiency by promoting change culture, engagement and emotional connection to the purpose of the organization since meaning and purpose offers a distinctive perspective to foster engagement growth (Shuck & Rose, 2013).

To finish the description of type of leadership, there are two more clusters that represent only 5% of total population. "Impostor" cluster with a 4% weight is the cluster with the lowest average performance level, youngest age average and less seniority with more female presence. This is characterized by a very low self-valuation which may refer to impostor phenomenon, that could be the reason behind the lower performance, since those who experiment impostorism face immediate challenges in performing effectively at work, leading to detrimental effects on their short-term success and potentially hindering their overall career progress (Hudson & González-Gómez, 2021). This is also aligned with the findings of Dominguez – Soto et. al (2023) who reports a negative correlation between impostor phenomenon and transformational leadership, and a positive association with less effective leadership styles (Domínguez-Soto et al., 2023) A supportive organization has the potential to reduce impostorism (Kark et al., 2022b), and giving executives the support to face new challenges specifically in new leaders' promotions through executive coaching, can be a way to improve emotional

support for loneliness sentiment (Kuna, 2019). Moreover, HR interventions designed to foster self-reflection, effective communication, and positive habits can help to develop more advanced leadership capabilities (Domínguez-Soto et al., 2024)

The last cluster with only 1% should be carefully interpreted, but it shows negative leadership traits that should be managed, although it has a performance above average. This cluster "narcissism" is characterized mainly for the lowest collaborators valuation mainly in communication and collaboration, and a high self-valuation. These two aspects could be a reflect of self-esteem and narcissism, traits that are present in narcissist leadership as one of the destructive leadership theories that have negative effect on the team (Einarsen et al., 2007). Defining actions to increase in these individuals a more communal focus on the team, could reduce narcissistic trait (Giacomin & Jordan, 2014), and also, reinforcing self-integrity and making them aware about ego threats could help to reduce hostility (Giacomin & Jordan, 2018).

In sum, to answer the first research question we can affirm that it is possible to identify leadership clusters applying machine learning to behavioural data. As a result, different leadership styles are found both positive and negative, and being able to identify and measure different leadership styles or states may enable the definition and implementation of improvement measures. Clusters that present traits more associated with Transformational and Participative leadership styles are the ones that present better performance and overall evaluation. Identifying main skills and behaviours to be promoted in order to implement these leadership styles within the organization is key to build a competitive advantage. In the same way, defining actions to challenge some negatives leadership states such as change aversion, comfort zone, impostorism and narcissism is crucial to ensure leadership effectiveness and better performance within the organization.

Which are the variables that impact the most in performance outcomes?

Firstly, we have shown how different leaders' cluster present differences in performance. Then through regression analysis, finding suggests there is a negative relationship with performance concerning the cluster variable. Notably, being a leader from Clusters "Comfort zone", "Change aversion" and "Impostor Syndrome" is associated with lower performance impact compared to "Transformational", which serves as the reference category for comparison. These three variables stand out for their elevated level of significance in predicting performance outcomes.

Secondly, the analysis reveals a direct relationship with performance in four observed variables regarding age and tenure. The age of leaders emerges as a significant factor, indicating that younger leaders tend to have a more substantial impact on target performance. Additionally, leaders with higher levels of tenure exhibit a positive association with performance. Moreover, the impact of performance is influenced by the composition of leaders' teams. Teams characterized by greater seniority and more presence of top executives are correlated with a more pronounced impact on performance**.** This may be connected with the concept of internal and informal networks that prevent organizational silos emergence and are influenced positively by age and management tenure leadership (Mouta & Meneses, 2021) and it is aligned with previous research which find age and tenure as significative factors that impact in performance.

Determining the optimal combination of leadership style, age and tenure within the organization should be crucial to optimize leadership effectiveness. Transformational and Participative leadership styles, in more tenure leaders with the lowest age and experienced teams could have more impact in performance while managing change aversion, comfort zone and impostor syndrome leadership states. This may suggest that certain level of experience and familiarity with the organization with internal and informal networks, combined with the more risk appetite of younger leaders that stand out in embracing change, self-determination and collaboration may contribute to better performance outcomes.

Which methodology might be implemented in the organization to better understand and measure leadership and define new actionable initiatives?

As we noted before, in strategic management, application of data and analytics is getting more relevance, given the growing attention to how data can enable better decision-making processes impacting performance (Ferraris et al., 2019). This also applies to Human resources management, leveraging people data through analytical techniques informing organizational strategy and improving performance (McCartney & Fu, 2022), where data availability is the first key element to effectively apply HR Analytics (Kremer, 2018).

There are some empirical cases in recent research showing the impact of using HR Analytics but still is a recent area of research and more research needs to be done to define practical implications organizations and inform best practices, strategies, and decision-making in the application of HR analytics (Bonilla-Chaves & Palos-Sánchez, 2023b).

This research adds a valuable contribution to the field of Human Resource analytics related to leadership and impact in performance. Applying machine learning techniques to existing organizational data, this methodology offers insights into leadership development, identifying distinct leadership clusters, and understanding the relationship of leaders with performance outcomes to support Human Resources to identify more relevant actions to implement in order to improve leadership effectiveness.

We offer a novelty in leadership and HR Analytics research literature with a new methodology consisting of applying hierarchical clustering to 360-degree feedback data to identify leadership clusters, and subsequent regression analysis using cluster and additional personal and professional data as age, tenure and team's composition to analyse impact in annual performance goals achievements. Through this methodology valuable insights are given to identify major behaviours to be promoted or diminished, leaders' clusters to be managed as well as to define the optimal combination of leaders regarding key variables such as tenure, age, and team's composition to improve leadership performance.

5.2.   Conclusions

The research results based on an empirical business case provide relevant insights into what type of leaders there are in an organization, what is the impact of different leaders in performance, and how a new methodology with machine learning can help Human Resources to improve leadership effectiveness.

As detailed in the hierarchical cluster results there are 6 leadership styles among over 1.200 managers in a multinational financial institution, which are the transformational, the Participative, Change Aversion, Comfort Zone, Impostor Syndrome and Narcissistic leadership

The analysis identifies two leadership styles with the higher impact on performance, which are the Transformational Leadership and the Participatory Leadership. The majority of the managers are included in this clusters (both add to 54%). The main best features of these groups are being keen on driving change, determination and collaboration. The identification of drivers towards a better leadership style is key for Human Resource management, so, fostering and training to these capabilities should be an objective. In order to improve overall leadership, the company should implement actionable actions on a cultural level as well as implementing leadership development practices such as coaching and training in the lower performance clusters.

According to the aim of this research, results provide strong evidence that Leadership effectiveness and performance impact can be improved thanks to machine learning methodologies applied to Human Resources data. The use of artificial intelligence tools to manage and enhance people analytics can help the Human Resources Department to take better decisions and adapt the necessary actions for each group knowing what can be better for each one.

Since Human Resource management plays a critical role in achieve organizational performance (Combs et al., 2006), this function may improve decision-making process

regarding leadership development as a result of applying machine learning methodology.

This methodology offers valuable insights since it identifies leaders whose behaviours need to be promoted or diminished, specific clusters to be managed such as "Comfort zone" or "Change aversion", and the formula to define the optimal leaders' combination to excel performance, considering not only clusters but key variables such as tenure, age, and team's composition. The implementation and use of 360 º feedback is not only a way of evaluation of an employee but also a tool for HR People analytics and actions.

This research contributes to literature by filling the gap between theoretical suggestions and the actual reality observed in empirical business case (Vogel et al., 2021), defining a link between process models and performance outcomes with a more strategic use of 360-feedback data (Day et al., 2014) and offering rigorous empirical research in HR Analytics (Bonilla-Chaves & Palos-Sánchez, 2023b).

Final reflection

To conclude I would like to add a final reflection based on the deep literature review made in this thesis, the results of the current research and my own leadership experience during more than 20 years. Each one of the leadership theories focuses on certain traits or characteristics, however, real good leaders excel in all behaviours, not only in certain ones (Skipper & Bell, 2006), and the most effective leadership is a combination of all of those.

Defining a compelling vision of the future of the organization, communicating high-performance expectation and empowering followers to achieve the vision, showing an exemplary behaviour, courage, and conviction making self-sacrificed if needed is the first step of leadership ((Shamir et al., 1993). This is one the main characteristics of Charismatic leadership, which represents the first step of leading an organization. However, this vision must be created as part of a collaboration methodology in which

the team is involved in the decision making process, so they can feel part of this future increasing their sense of belonging and personal objectives become the objectives of the organization (Jing et al., 2017), which is a characteristic of participative leadership. Leader and team members are part of a group and a social identity, the more the leader is identified with the group, and the more the leader acts in the interest of the group, the better the results as indicates social identity theory (Platow et al., 2015).

In addition to this, since leadership is not isolated and is part of a social context in an organization, not only the support of the team is crucial, but ensuring the support of the whole organization to guarantee alignment first and success afterwards. Leadership is a collective outcome shaped by the interactions and collaborative efforts of team members (Day et al., 2004), and this is becoming more and more relevant given the dynamic competitive context and evolution of organization structures. In this sense, collaboration becomes a key competence to support this alignment, and specifically managing complexities when people do not want to collaborate adopting more pragmatical approaches (Vangen & Huxham, 2003).

In this shared process, humility to adapt the vision as a result of the feedback received from members of the group is key to achieve the alignment in this envisioning process. Humble leadership is characterized by having an accurate and realistic view of oneself, acknowledging and appreciating the contributions of followers, and modelling a willingness to learn and adapt (Zhou & Wu, 2018). This allow leaders to build the trust in the organisation, and this trust is reinforced by authenticity. "The authentic leader is confident, hopeful, optimistic, resilient, transparent, moral/ethical future-oriented, and gives priority to developing associates into leaders themselves. The authentic leader does not try to coerce or even rationally persuade associates, but rather the leader's authentic values, beliefs, and behaviours serve to model the development of associates." (Luthans & Avolio, 2003).

Once the vision is set and shared by the organization, determination to make it real is the next critical step to manage. Being able to plan, prioritize, organize and schedule

work effectively is part of the execution process of the vision. The ability to be proactive, take initiatives responsibly, and make things happen in a simple and organized manner is determined by an individual's capacity for strategic planning, proactive decision-making, and efficient execution of tasks. This taking charge concept is aligned with empowering leadership which is particularly relevant when change-oriented behaviour needs to be reinforced for the organization success versus directive leadership (Kim et al., 2023).

When plan is defined, determination and tenacity in the execution process is the next relevant phase. Being able to transform the business by communication passionately implementing activities, goals, working with a deeper significance and purpose contributes to a greater sense of fulfilment, engagement, and motivation among individuals to make it teal (Forner et al., 2020). Addressing fundamental needs of the team, their competence, relatedness, and autonomy, contribute to increased work engagement, commitment, and job satisfaction among team members. This highlights the importance of leaders fostering an environment that supports the basic needs of individuals for optimal workplace outcomes (Gözükara & Şimşek, 2015) as is highlighted in self-determination theory (Deci et al., 2017).

Since leadership is a complex process and full of obstacles, high energy levels to overcome them is very relevant. Proactivity and optimism are traits very much present in effective leaders showing willingness to take risks and make personal sacrifices if necessary (Conger & Kanungo, 1998).

In all this leadership process communication is must, no matter the type of leadership. Essentially, being a leader involves possessing effective communication skills. The ability to communicate clearly, inspire others, and navigate various communication challenges is integral to successful leadership (Barge & Hirokawa, 1989). Communication skills enable expressing ideas with respect and creating an environment where individuals feel comfortable giving and receiving feedback as a way to create a positive and open communication culture. Empower the team through the sharing of information, giving

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constructing feedback and fostering trust by knowing how to deal respectfully and understandingly with other (Kets de Vries et al., 2004). Effective communication encompasses more than just verbal fluency; it involves the skill to convey information in a manner that resonates with the recipient emotionally and cognitively (Bass & Bass, 2009).

5.3.   Practical implications

The most relevant practical implication of this research is the creation of a methodology that can help in the decision making process of Human Resources with the aim of improving organization results by increasing the effectiveness of the leadership team.

The organization we analyse in this research has a very powerful asset regarding human resource data and presents a good opportunity to improve leadership human resource management by applying machine learning methods to this relevant asset. Through this research we show how this opportunity may be exploited applying the methodology designed. Regarding feedback 360 Data, this source of information is currently used at an individual level by the managers, and for reporting purposes, but it is not exploited analytically. Through the 360 clustering, Human Resources department may identify first what different groups of leaders the company has regarding 360 behaviours, analysing if current leadership reality is aligned with corporate behaviours and how this clusters have different behaviours composition and performance results. Second, as a result of the 360 clustering, Human Resource department may identify different actionable actions to improve leadership behaviours, motivation and engagement through different practices such as coaching or specific training programs. Promoting Transformational and Participative leadership, while managing negative leadership styles, reducing Leadership's team aversion to change, comfort zone state and impostor syndrome, would be the main targets of the plans to be implemented. This 360 clustering could be implemented in the Human Resource management practice to analyse not only current

leadership sate, but future evolution of clusters as a result of the practical measures defined.

The regression process may also help the Human Resource department to analyse the variables that impact the most in annual performance review to help decision-making process in leadership team composition. Not only is important to manage different leadership clusters at an individual or group level, but also is relevant to analyse the whole composition of leadership team in the organization in terms of age, seniority and teams' composition to optimise global results. Ensuring an adequate mix between leadership style, age, seniority and team's composition would be key to improve performance results. Human resource team could implement this method to simulate performance regarding different variables, to help the decision making process of management team evolution, regarding for example internal promotion and recruiting processes criteria.

Implementing this methodology the organization may improve leadership decisions and their impact in performance results, individually and as a group level. If a company has 360 data and a minimum of human resources data, it can be easily implemented.

5.4. Limitations and future research

There are many factors that impact in organizational performance besides leadership styles and characteristics. So, improving performance model should include more variables that only those related to leaders, such as, market context, competitiveness etc. Other elements that may have an impact on leadership performance include goals setting process, incentives model or culture values definition.

Another limitation to consider is regarding the sample. Although it is a big sample in this type of research, it is relevant to highlight that is related to specific sector and it may not be generalizable to other industries. The time period under consideration may present another limitation. This research is based only with 2022 data but does not consider

evolution of leaders along the time. It could be interesting to analyse how performance evolves regarding leadership development process. To finish current limitations, it is important to clarify that this research is based on individual data, but it does not consider data as a result of social interactions. Leadership development occurs in social context, and part of this context could be part of the model through social leadership network analysis (Day et al., 2014).

This research also includes data from different countries and cultures, analysing geographical effect in leadership clusters and performance impact could lead future area of research to identify culture patterns in leadership. Including variables regarding context, market and Human resource practices data could add more insight into performance development, as well as analysing the impact of the training and development practices put in place with leaders along the time, not only with static data. To finish, social interaction between leaders and network analysis impact in performance is a relevant topic to research as a broader view in leadership impact within organizations.

More research in Human Resource Machine learning methodologies is needed to show how data can help to identify opportunities and implement decisions to improve leadership effectiveness (Bonilla-Chaves & Palos-Sánchez, 2023b).

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